

REPORT NUMBER: 201U-VER-04-05

**SAFETY COMPLIANCE TESTING FOR FMVSS 201  
OCCUPANT PROTECTION IN INTERIOR IMPACT  
UPPER INTERIOR HEAD IMPACT PROTECTION**

**AUTO ALLIANCE INTERNATIONAL INC. FOR MAZDA MOTOR CORPORATION  
2004 MAZDA 6 4-DOOR SEDAN**

NHTSA NUMBER: C45400

GD TEST NUMBER: 8730-05

**ADVANCED INFORMATION ENGINEERING SERVICES  
A GENERAL DYNAMICS COMPANY  
TRANSPORTATION SCIENCES CENTER  
P.O. BOX 400  
BUFFALO, NEW YORK 14225**



Test Date: January 29, 2004

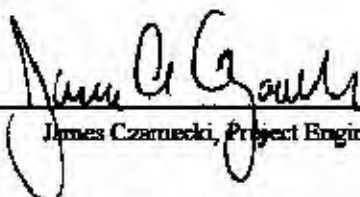
**FINAL REPORT**

**PREPARED FOR:**

**U. S. DEPARTMENT OF TRANSPORTATION  
National Highway Traffic Safety Administration  
Enforcement  
Office of Vehicle Safety Compliance  
Mail Code: NVS-220, Room 6111  
400 Seventh Street, SW  
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Prepared by:

  
James Czarniecki, Project Engineer

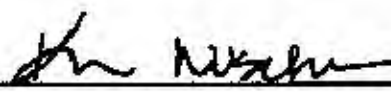
Approved by:

  
David J. Travala, Program Manager  
Transportation Science Center

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# **TECHNICAL REPORT STANDARD TITLE PAGE**

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4. Title and Subtitle Final Report of FMVSS 201 Compliance Testing of a 2004 Mazda 6, 4-door Sedan, NHTSA No. C45400				5. Report Date / Final Test Date  January 29, 2004	
				6. Performing Organization Code VER	
7. Author(s) David J. Travale, Program Manager James Czarniecki, Project Engineer				8. Performing Organization Report No. 8730-05	
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15. Supplementary Notes					
16. Abstract  Compliance tests were conducted on the subject vehicle, a 2004 Mazda 6 4-door Sedan, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure TP-201U-01 for determination of FMVSS 201 compliance. Test failures identified were as follows in the table below:					
Target Point	Horizontal	Vertical	Velocity	HIC	HICd
None	-	-	-	-	-
None	-	-	-	-	-
17. Key Words Compliance Testing Safety Engineering FMVSS 201			18. Distribution Statement Copies of this report are available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, DC 20590 Telephone No.: 202-366-4946		
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## **SECTION 1**

### **PURPOSE AND TEST PROCEDURE**

This head impact compliance test is part of the FMVSS 201 Upper Interior Head Impact Protection Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-99-C-01003. The purpose of this head impact compliance test was to determine whether the subject vehicle, 2004 Mazda 6, 4-door Sedan, NHTSA No. C45400, meets the performance requirements of FMVSS 201, Occupant Protection in Interior Impact. The compliance test was conducted in accordance with the OVSC Laboratory Test Procedure No. TP-201 U-01 dated April 03, 1998.

## SECTION 2

### SUMMARY OF UPPER INTERIOR HEAD IMPACTS

A 2004 Mazda 6, 4-door Sedan, NHTSA No. C45400, was impacted at various locations throughout its upper interior by a 4.54 kg 50<sup>th</sup> percentile headform. A total of ten (10) impacts were performed in this test series. The target area impacts were chosen by the NHTSA Contracting Officer's Technical Representative (COTR). A summary of test results can be found on data sheet 2-1. The ten (10) area chosen for testing were:

BP4	BP1	RP1	AP3	AP1
SR2A	BP3	URBP	AP2	SR1

The selected impact areas on the test vehicle appeared to comply with the performance requirements of FMVSS 201.

Five Free Motion Headforms (FMH), were used in this test series. All five FMH's were calibrated prior to and after the test series. Calibration information are included in Appendix B. Each FMH weighed  $4.54 \pm 0.5$  kg and has an orthogonal tri-axis accelerometer pack mounted at the center of gravity (c.g.).

A total of three (3) channels of data for each target impact test are recorded on a Keyser-Threds data acquisition system. Data plots, along with still photographs, can be found in Section 3 of this report.

To document each target area impact test, one Weinberger high-speed video camera was placed at various locations to view the headform contact with the selected target area.

**DATA SHEET 2-1**

**SUMMARY OF UPPER INTERIOR HEAD IMPACT TESTS**

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVFP80C345N22817
DATE OF MANUFACTURE:	09/03 (SEE CERTIFICATION LABEL)
COLOR:	Silver

TARGET CODE	Target Coordinates						Approach Angles (degrees)		Velocity (mph)	FMH HIC	HIC(d)
	Driver Side			Passenger Side			Horizontal	Vertical			
	X(mm)	Y(mm)	Z(mm)	X(mm)	Y(mm)	Z(mm)					
AP1	2109.1	-913.3	1463.4	2103.8	312.2	1470.3	Relocated 3 times		-	-	-
Rel AP1	2132.0	-539.7	1407.0	2125.0	539.8	1410.6	112	31	23.58	857.1	813
AP2	2087.3	-560.3	1376.2	2084.0	557.3	1384.7	207	31	23.47	315.1	404.1
AP3	1906.9	-593.8	1292.5	1898.3	593.7	1294.8	155	39	23.42	520.2	558.9
BP1	2649.1	-463.9	1514.6	2646.0	460.7	1523.4	90	19	23.54	537.4	571.8
BP2	2609.4	-582.3	1280.2	2605.4	579.8	1285.0	-	-	-	-	-
BP3	2575.8	-604.1	1306.3	2576.5	599.2	1314.3	Relocated 1 time		-	-	-
Rel BP3	2571.7	-604.7	1308.0	2568.4	598.3	1317.2	284	-8	23.5	839.4	799.7
BP4	2649.7	-644.5	1198.1	2647.1	641.0	1213.5	150	-9	23.73	678.2	678.1
FH1	2054.0	-386.0	1466.7	2049.7	394.1	1474.5	-	-	-	-	-
FH2	2036.8	-236.6	1471.3	2038.6	240.6	1483.6	-	-	-	-	-
RP1	1367.3	-484.9	1471.7	3362.0	485.5	1483.8	90	11	23.73	521.3	559.7
RP2	1384.5	-587.7	1321.2	3381.2	580.7	1334.5	-	-	-	-	-
RH	3359.0	-341.7	1512.1	3348.1	340.0	1526.6	-	-	-	-	-
SR1	2265.3	-479.9	1486.0	2248.4	478.5	1493.1	Relocated 1 time for driver side Relocated 2 times for passenger side		-	-	-
Rel SR1	2275.1	-490.0	1474.4	2271.4	474.4	1482.3	270	26	23.56	409.8	475.5
SR2A	2415.7	-476.8	1492.4	2408.6	488.2	1507.8	Relocated 2 times on passenger side		-	-	-
Rel SR2A	-	-	-	2443.0	476.9	1490.3	90	42	23.62	622.2	635.8
SR2B	2350.6	-479.7	1487.0	2344.2	491.7	1503.1	Relocated 2 times on passenger side		-	-	-
Rel SR2B	-	-	-	2340.9	460.2	1499.1	-	-	-	-	-
SR3	3103.4	-483.7	1472.3	2913.3	477.8	1491.3	-	-	-	-	-
URBP	2651.5	-348.6	1537.5	2636.4	354.5	1548.6	270	50	23.5	669.6	671.6
URAP	2237.8	-390.0	1491.6	2229.6	391.2	1499.7	-	-	-	-	-
URRP	3252.0	-394.9	1520.0	3252.0	391.9	1532.7	-	-	-	-	-

\*HIC(d)=0.73446(Free Motion Halfform HIC)+156.4

Mazda's reference point for x,y,z coordinate correlation (Driver side front outboard seat bolt hole: x=2024 mm, y=-582 mm, and z=461 mm) is General Dynamic's coordinate system.

# DATA SHEET 2-2

## GENERAL TEST AND VEHICLE PARAMETER DATA

<b>TEST VEHICLE INFORMATION:</b>									
Year/Make/Model/Body Style:				2004 Mazda 6 4-door Sedan					
VIN:				1YVFP80C345N22817					
Month & Year of Manufacture:				09/03 (SEE CERTIFICATION LABEL)					
Vehicle Body Color:				Silver					
Engine Data:	4	Cylinders:	-	CID:	2.3	Liters:	-	cc	
Engine Placement:	x		Longitudinal:	or		-		Lateral	
Transmission:	4	Speed:	-	Manual:	x	Automatic:	x	Overdrive	
Final Drive:	-	Rear Wheel Drive:	x	Front Wheel Drive:	-	Four Wheel Drive			
Odometer Reading:	39		km						
Options:	x	A/C:	x	Power Steering:	x	Pwr.Brakes:	x	Pwr. Windows	
Interior Trim Information:									
1. B-Pillars contain adjustable seat belt anchorages.									
2. Front Passenger side rail contains grab handle.									
3. Rear outboard seating position side rails contain grab handles.									

<b>DATA FROM TIRE PLACARD:</b>									
Tire Pressure (at capacity):				220		kPa FRONT			
				220		kPa REAR			
Recommended Tire Size:				P205/60R16					
Tires on Test Vehicle:		P205/60R16		Manufacturer:		Michelin			
Vehicle Capacity Data:									
Number of Occupants:	2	Front:	3	Rear:	-	3rd Seat:	5	Total	
Type of Front Seats:	x	Bucket:	-	Bench:	-	Split Bench			
Type of Front Seat Back:	-	Fixed:	x	Adjustable with	x	Lever or	-	Knob	
Vehicle Capacity Weight (VCW)=				385		kg (A)			
No. of Occupants x 68 kg. =				340		kg (B)			
Rated Cargo/Luggage Weight (RCLW) =				45		kg (A-B) Max. RCLW = 136 kg.			

## DATA SHEET 2-2

### GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:					
Left Front	=	423	kg	Left Rear	= 286 kg
Right Front	=	419	kg	Right Rear	= 275 kg
TOTAL FRONT	=	842	kg	TOTAL REAR	= 561 kg
% of Total Weight	=	60	%	% of Total Weight	= 40 %
TOTAL WEIGHT	=	1403	kg		

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:		
Total Test Vehicle Delivered Weight=	1403	kg (A)
+ Rated Cargo/Luggage Weight =	45	kg (B)
TEST VEHICLE TARGET WEIGHT =	1448	kg (A+B)

WEIGHT OF TEST VEHICLE (FULLY LOADED):					
Left Front	=	419	kg	Left Rear	= 307 kg
Right Front	=	416	kg	Right Rear	= 301 kg
TOTAL FRONT	=	835	kg	TOTAL REAR	= 608 kg
% of Total Weight	=	57.9	%	% of Total Weight	= 42.1 %
TOTAL TEST WEIGHT	=	1443	kg		
Weight of vehicle secured in test vehicles cargo area	=	45	kg		

TEST VEHICLE ATTITUDE (all dimensions in millimeters):				
AS DELIVERED:	Left Front	734	Left Rear	724
	Right Front	733	Right Rear	725
FULLY LOADED:	Left Front	732	Left Rear	714
	Right Front	730	Right Rear	714
Test Vehicle Wheelbase		2675		millimeters

TEST VEHICLE PITCH AND ROLL ANGLES:				
AS DELIVERED:	PITCH ANGLES		ROLL ANGLES	
	Left Door Sill	0.51	Front Bumper	0.11
	Right Door Sill	0.61	Rear Bumper	0.11
FULLY LOADED:	PITCH ANGLES		ROLL ANGLES	
	Left Door Sill	0.31	Front Bumper	0.11
	Right Door Sill	0.41	Rear Bumper	0.0
AS TESTED:	PITCH ANGLES		ROLL ANGLES	
	Left Door Sill	0.41	Front Bumper	0.11
	Right Door Sill	0.51	Rear Bumper	0.0

**DATA SHEET 2-J  
TARGET MEASUREMENT REFERENCE SHEET**

<b>VEHICLE YEAR/MAKE/MODEL/STYLE:</b>	2004 Mazda 6 4-door Sedan
<b>VIN:</b>	1YVFP80C345N22817
<b>DATE OF MANUFACTURE:</b>	09/03(SHE CERTIFICATION LABEL)
<b>COLOR:</b>	Silver

Measurements	Description	Left Side	Right Side
M	Seat fore / Aft travel (Front seats)	239	239
T° DRIVER SIDE	Horizontal angle (CG-F1 (Left seat) to (Right A-pillar))	111	-
A1° DRIVER SIDE	$360^\circ - T^\circ$	249	-
WE° DRIVER SIDE	Horizontal angle (CG-F2 (Left seat) to (Left A-pillar))	201	-
A2° DRIVER SIDE	$A2^\circ = W^\circ$	201	-
U° DRIVER SIDE	Horizontal angle (CG-F2 (Left seat) to (Left B-pillar))	278	-
B1° DRIVER SIDE	$B1^\circ = U^\circ$	278	-
V° DRIVER SIDE	Horizontal angle (CG-FR (Left seat) to (Right B-pillar))	199	-
B2° DRIVER SIDE	$B2^\circ = V^\circ$	199	-
W° PASSENGER SIDE	Horizontal angle (CG-F2 (Right seat) to (Right A-pillar))	-	159
A1° PASSENGER SIDE	$A1^\circ (\text{Right}) = W^\circ (\text{Right})$	-	159
T° PASSENGER SIDE	Horizontal angle (CG-F1 (Right seat) to (Left A-pillar))	-	249
A2° PASSENGER SIDE	$360^\circ - T^\circ (\text{Right})$	-	111
V° PASSENGER SIDE	Horizontal angle (CG-FR (Right seat) to (Right B-pillar))	-	159
B1° PASSENGER SIDE	$B1^\circ (\text{Right}) = V^\circ (\text{Right})$	-	159
U° PASSENGER SIDE	Horizontal angle (CG-F2 (Right seat) to (Right B-pillar))	-	82
B2° PASSENGER SIDE	$B2^\circ (\text{Right}) = U^\circ (\text{Right})$	-	82
J	A-pillar {(Plane 3) - (Plane 5)}	348	350
J/2	$J \div 2$	174	175
D1	Upper Roof {(Plane A) - (Plane B)}	1512	
D1/2	$D1 \div 2$	756	
D2	Upper Roof {(Plane C) - (Plane D)}	1158	
D2/2	$D2 \div 2$	579	
.35D1	$.35 \times D1$	529	
.35D2	$.35 \times D2$	405	
N	B-pillar {(BPR) - (lowest point on the daylight opening forward of B-pillar)}	420	418
N/2	B-pillar {(BP3) - (lowest point on the daylight opening forward of B-pillar)}	210	209
N/4	B-pillar {(BP3) - (lowest point on the daylight opening forward of B-pillar)}	105	104.5
Q	Other-pillar {(OPR) - (lowest point on the daylight opening forward of O-pillar)}	-	-
Q/2	Other-pillar {(OP2) - (lowest point on the daylight opening forward of O-pillar)}	-	-
D	{(Corner of roof area, point 7) - (roof area center, point M)}	669	669
3D/7	$(3 \times D) \div 7$	287	287
MM	Widest door opening of slider door	-	-
M	$MM \div 2$	-	-

**DATA SHEET 2-4**  
**APPROACH ANGLE LIMITS**

Left Side					Right Side				
Target Code	Horizontal Angles (deg.)		Vertical Angles (deg.)		Target Code	Horizontal Angles (deg.)		Vertical Angles (deg.)	
	Minimum	Maximum	Minimum	Maximum		Minimum	Maximum	Minimum	Maximum
AP1	201	249	-5	31	AP1	111	159	-5	31
AP2	201	249	-5	31	AP2	111	159	-5	31
AP3	201	249	-5	39	AP3	111	159	-5	39
BP1	199	278	-10	19	BP1	82	139	-10	19
BP2	ANY		0	1	BP2	ANY		0	1
BP3	199	278	-10	-10	BP3	82	139	-10	-10
BP4	199	278	-10	-9	BP4	82	139	-10	-9
CP1	270		-	-	CP1	90		-	-
CP2	270		-	-	CP2	90		-	-
RP1	270	345	-10	11	RP1	15	90	-10	11
RP2	270	345	-10	16	RP2	15	90	-10	16
FH1	180		0	90	FH1	180		0	90
FH2	180		0	90	FH2	180		0	90
RH	360		0	90	RH	0		0	90
SR1	270		0	36	SR1	90		0	36
SR2A	270		0	42	SR2A	90		0	42
SR2B	270		0	42	SR2B	90		0	42
SR3	270		0	42	SR3	90		0	42
SR3GH	270		0	30	SR3GH	90		0	42
URAP	ANY		0	90	URAP	ANY		0	90
URBP	ANY		0	90	URBP	ANY		0	90
URRP	ANY		0	90	URRP	ANY		0	90

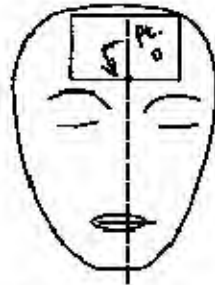
Note : BP2 target location – Seat belt anchorage



# DATA SHEET 2-5

## SUMMARY TARGET IMPACT LOCATION ON FMH

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVFP80C345N22817
DATE OF MANUFACTURE:	09/03 (SEE CERTIFICATION LABEL)
COLOR:	Silver



R RIGHT SIDE OF FACE

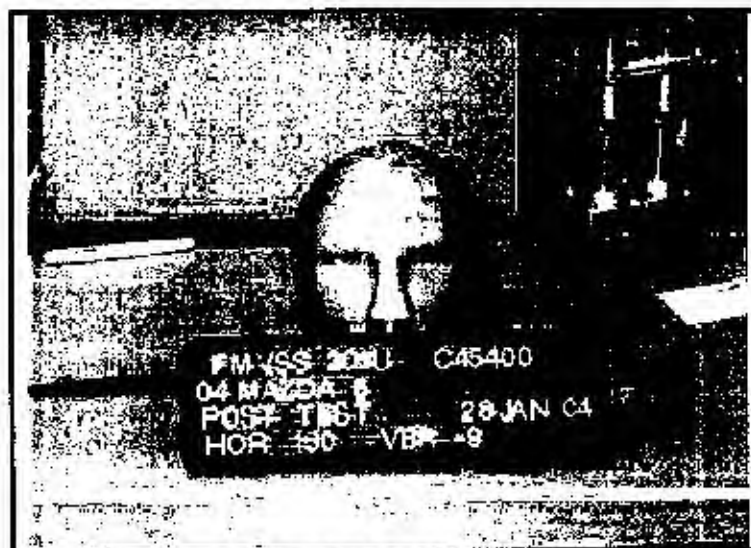
TARGET	Distance Above Point O (mm)	Distance Over From Pt. O (mm)
BP4	20	19 to the left
BP1	47	3 to the right
RP1	58	10 to the left
AP3	38	8 to the left
AP1	13	20 to the right
SR2A	7	5 to the right
BP3	8	25 to the left
URBP	46	5 to the left
AP2	40	4 to the right
SR1	18	7 to the right

**SECTION 3**  
**SUMMARY OF TEST RESULTS AND DATA PLOTS**

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVFP80C345N22817
DATE OF MANUFACTURE:	09/03 (SEE CERTIFICATION LABEL)
COLOR:	Silver

Test Number:	01
Test Date:	January 28, 2004
Target Location:	B-Pillar
Target Code:	BP4
Horizontal Impact Angle:	150°
Vertical Impact Angle:	-9°
Ambient Temperature:	22°C
Relative Humidity:	15
Time of Impact:	10:40
Headform Number:	0642

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	19	mm right	x mm left
On Centerline	20	mm up	



POST-IMPACT BP4 HEADFORM

Free Motion HIC	678.2
HIC(d)	678.1
Impact Velocity (kph)	23.73
HIC T1 (msec)	1.4
HIC T2 (msec)	8.9

# FMVSS 201U IMPACT TEST - 2004 Mazda 6 C45400 - BP4

FMH Headform 0642

Location: BP4

Test Date: January 28, 2004

Work File: BP4

## TEST RESULTS

Lab Temperature: 22 C

HICd: 678.1

Lab Humidity: 15 %

HIC (36ms): 678.2

Velocity at Impact: 23.73 KPH

t1: 1.4 msec

t2: 8.9 msec

Duration: 7.5 msec

Free Flight Distance: 212.05 mm

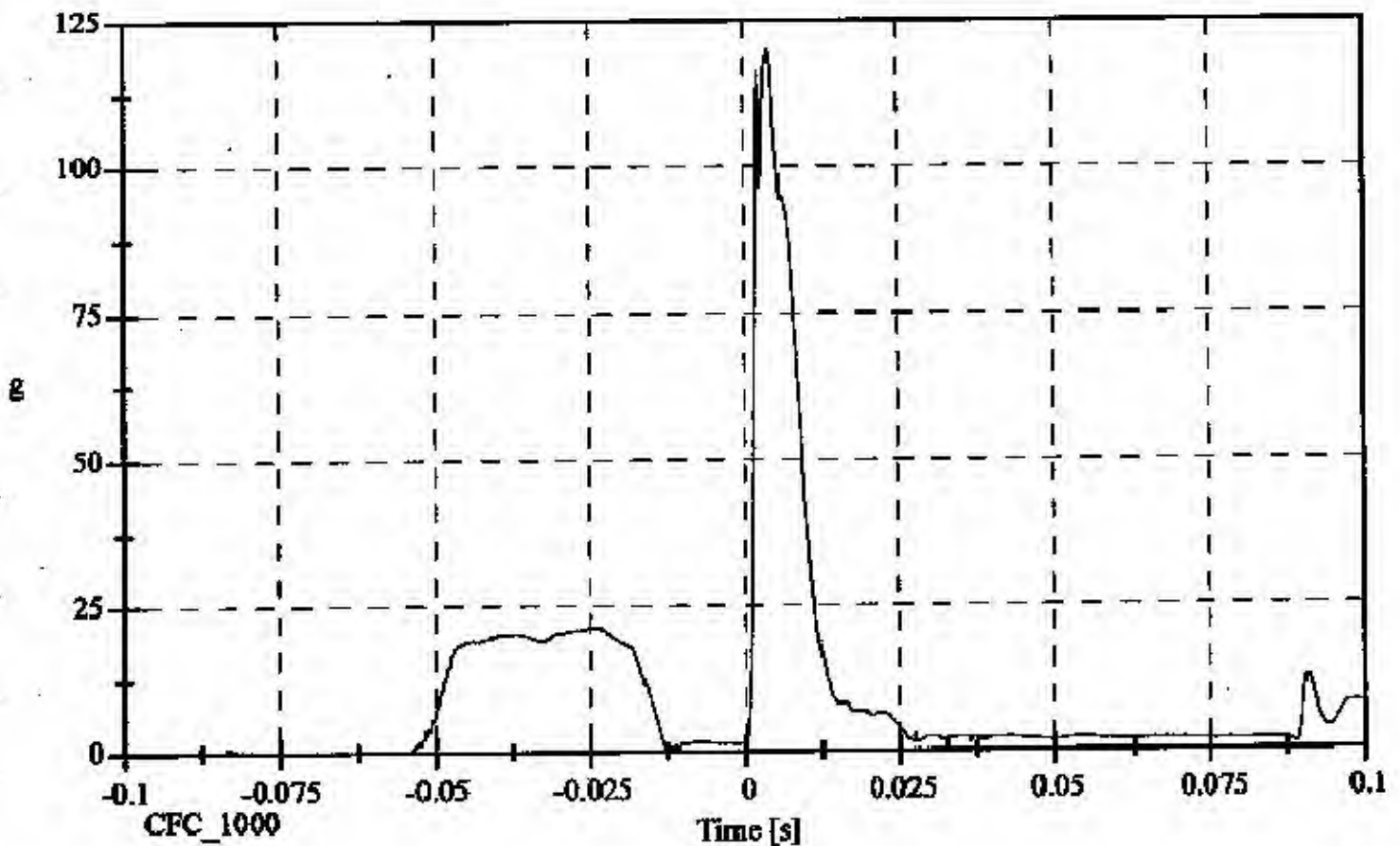
Average Acceleration: 9.3 g

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 119.9 [g] at 0.004 [s]

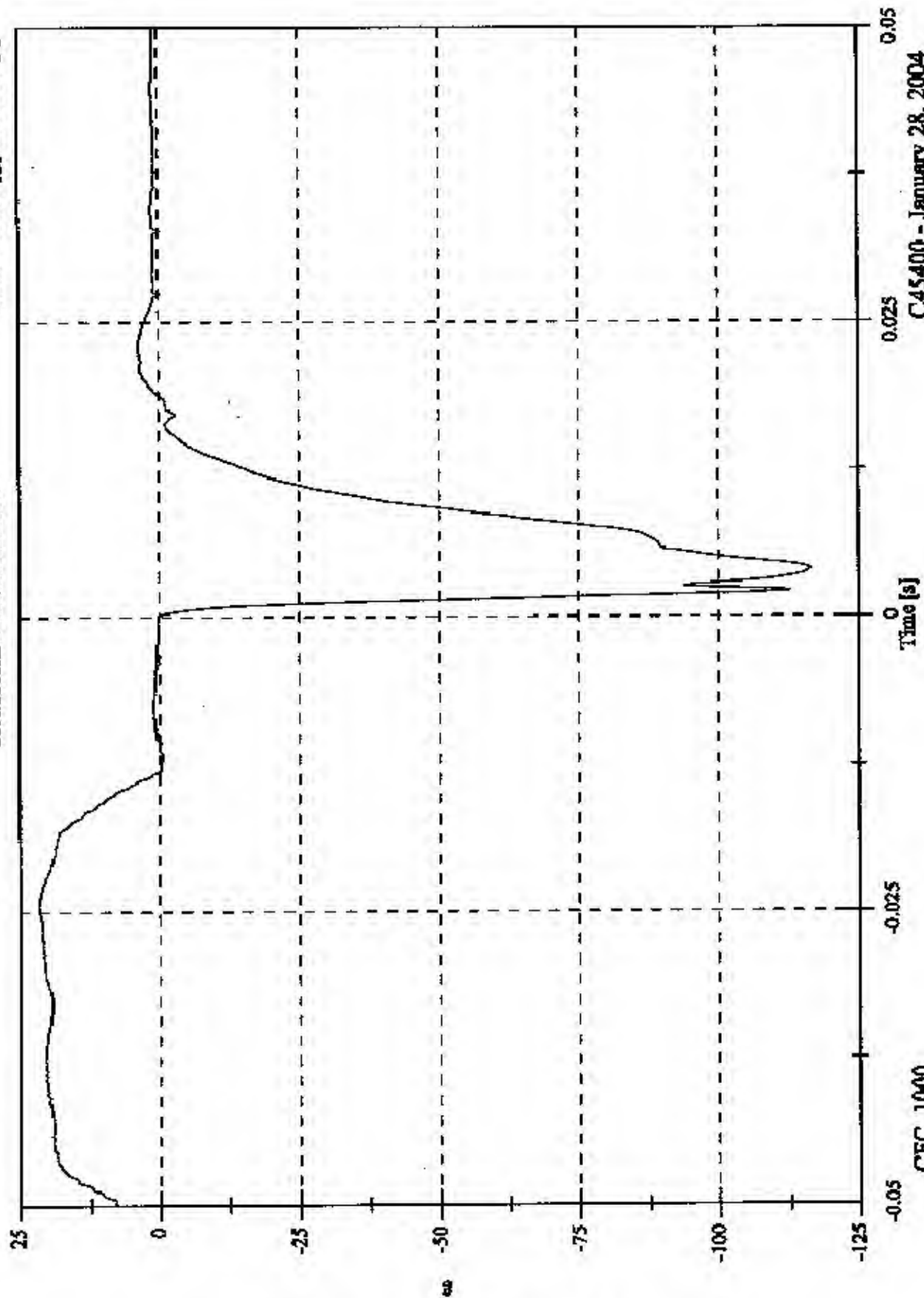
Min: 0.0 [g] at -0.099 [s]



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 21.5 [g] at -0.024 [s]  
Min: -116.4 [g] at 0.004 [s]

Headform X Acceleration



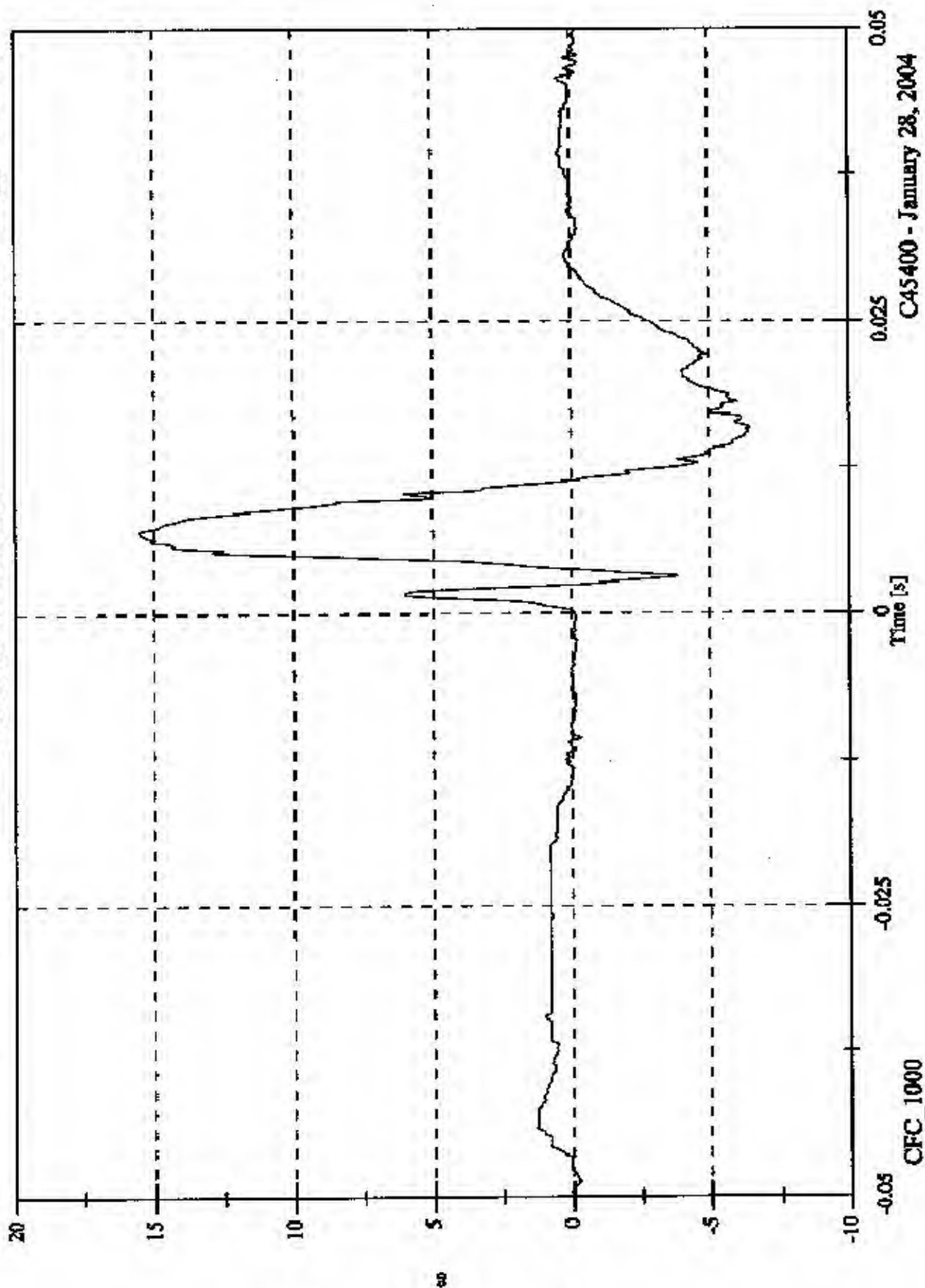
CFC\_1000

C45400 - January 28, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Y Acceleration

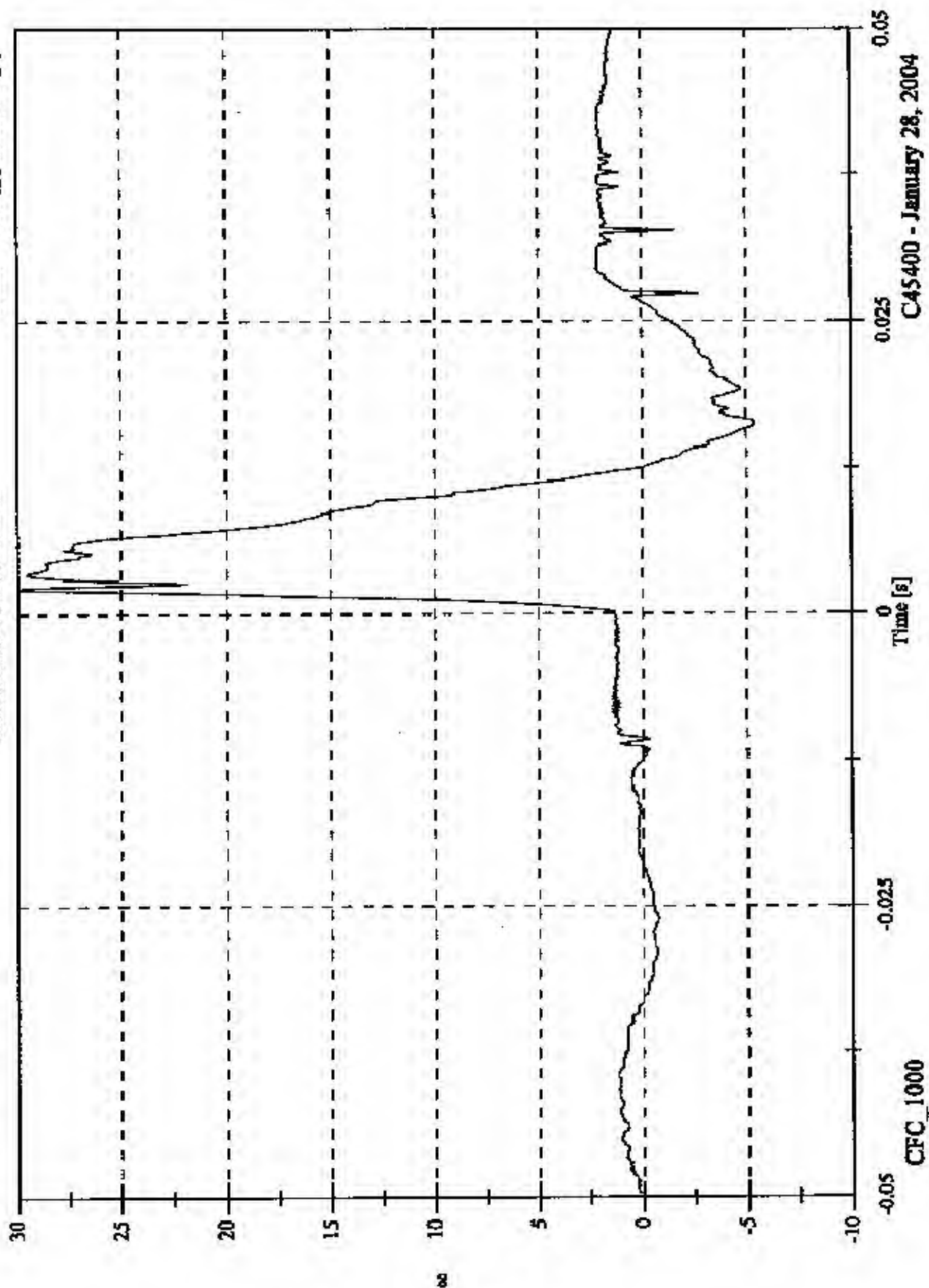
Max: 15.6 [g] at 0.007 [s]  
Min: -6.5 [g] at 0.016 [s]



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 30.0 [g] at 0.002 [s]  
Min: -5.4 [g] at 0.016 [s]

Headform Z Acceleration

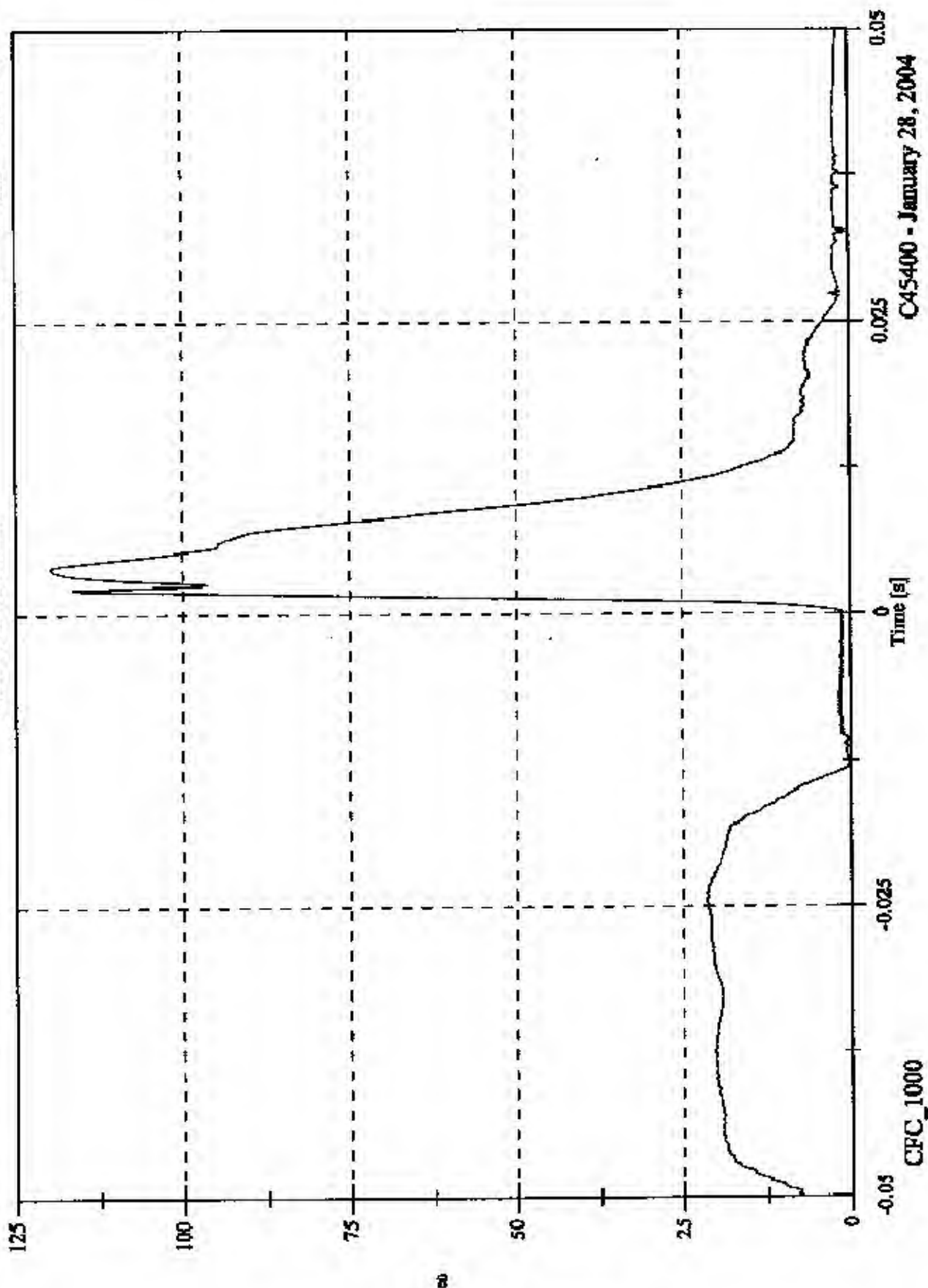


C45400 Passenger Side BP4 Impact Plot #3

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 119.9 [g] at 0.004 [s]  
Min: 0.2 [g] at -0.011 [s]

Headform Resultant



C45400 - January 28, 2004

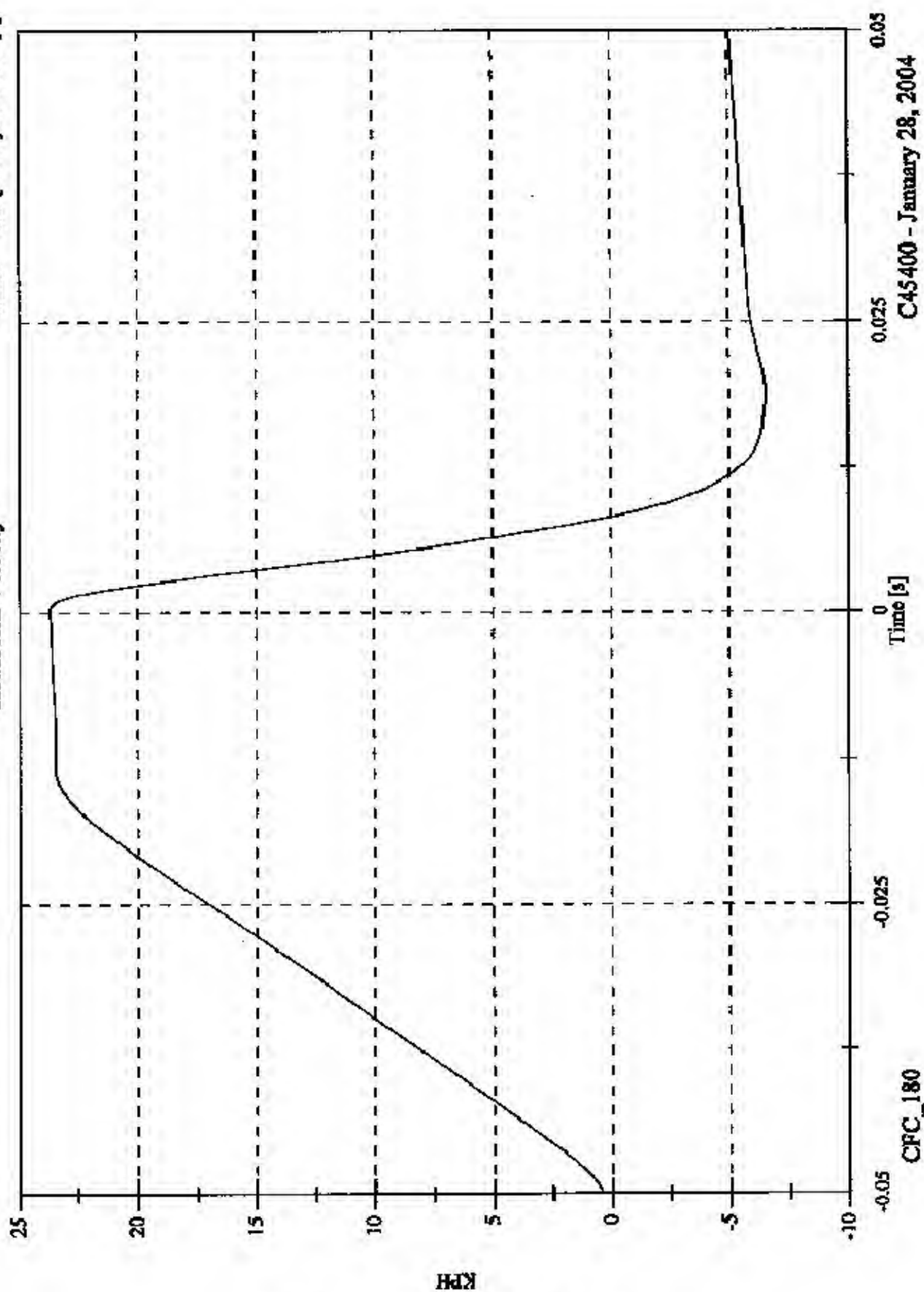
C45400 Passenger Side BP4 Impact Plot #4



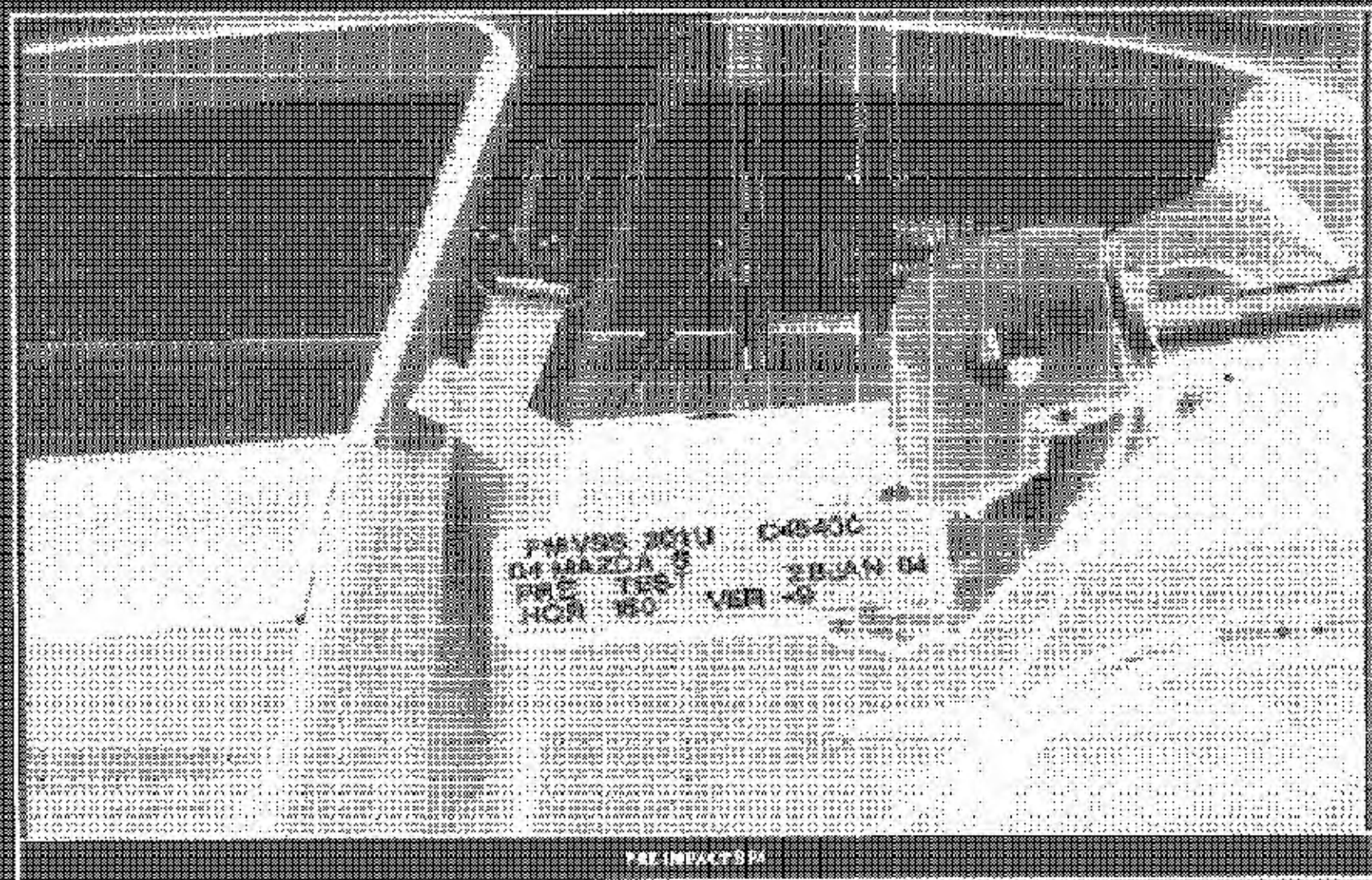
FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 23.7 [KPH] at 0.000 [s]  
Min: -6.5 [KPH] at 0.019 [s]

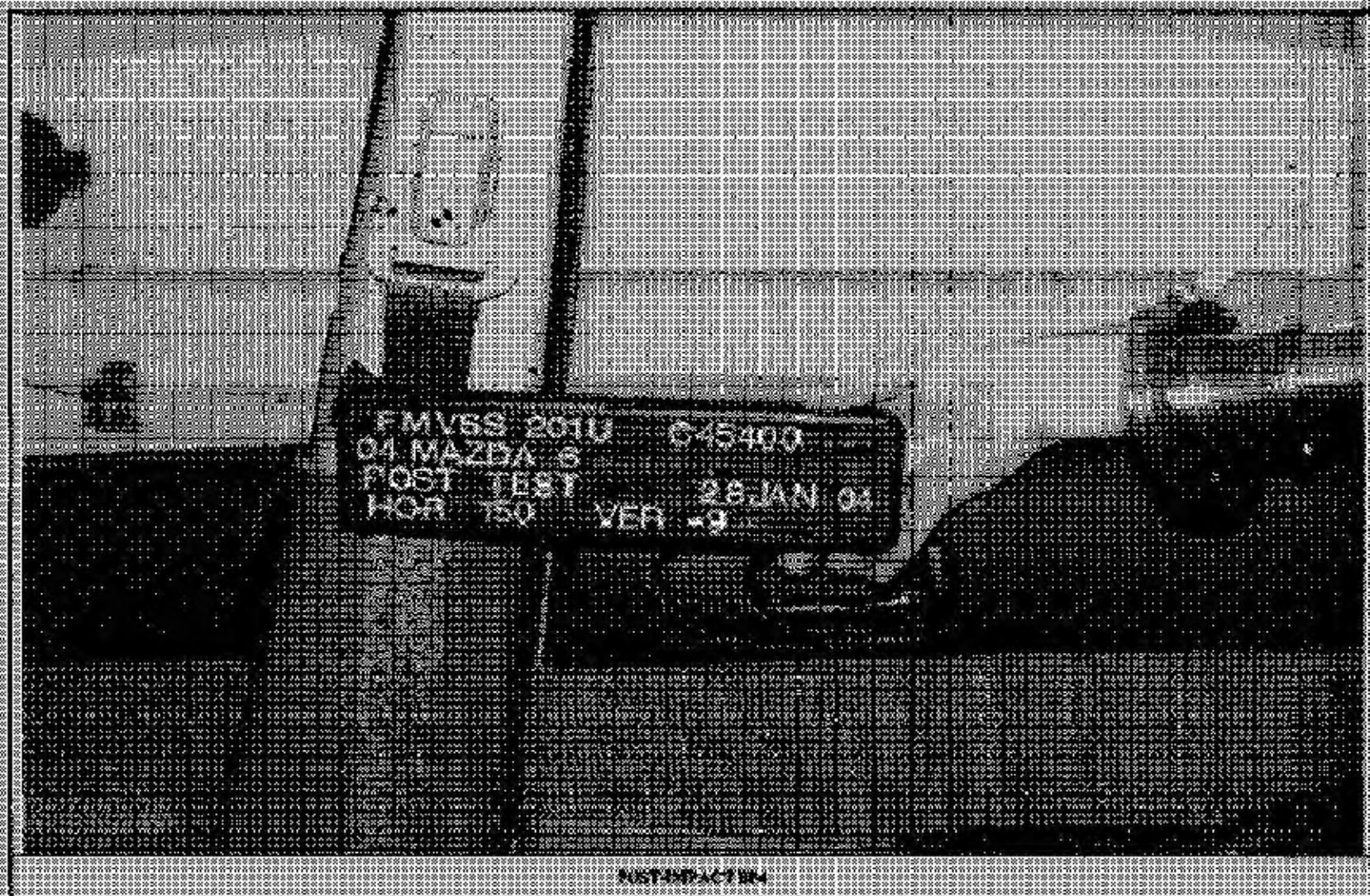
Headform Velocity



C45400 Passenger Side BP4 Impact Plot #5



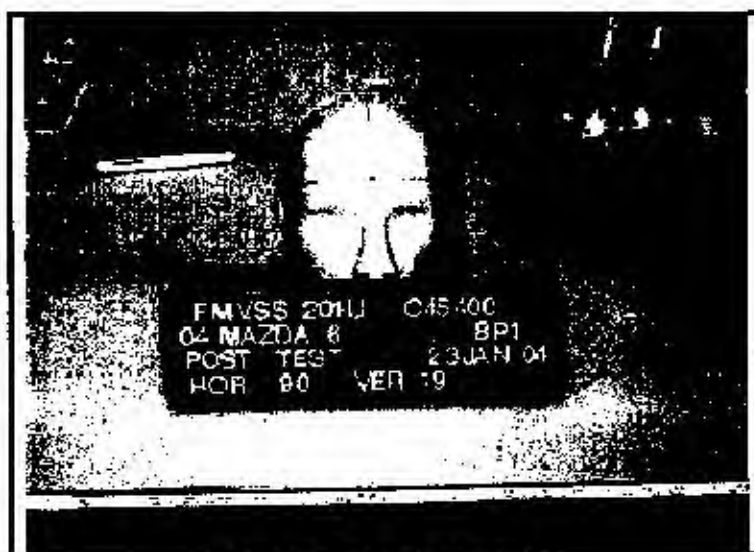




VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVFP80C345N22817
DATE OF MANUFACTURE:	0903(SEE CERTIFICATION LABEL)
COLOR:	Silver

Test Number:	02
Test Date:	January 28, 2004
Target Location:	B-Pillar
Target Code:	BP1
Horizontal Impact Angle:	90°
Vertical Impact Angle:	19°
Ambient Temperature:	22°C
Relative Humidity:	15
Time of Impact:	11:10
Headform Number:	1255

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	3	<input checked="" type="checkbox"/> mm right	<input type="checkbox"/> mm left
On Centerline	47	mm up	



POST-IMPACT BP1 HEADFORM

Free Motion HIC	537.4
HIC(d)	571.8
Impact Velocity (kph)	23.54
HIC T1 (msec)	21
HIC T2 (msec)	12.6



# FMVSS 201U IMPACT TEST - 2004 Mazda 6 C45400 - BP1

FMH Headform 1255

Location: BP1

Test Date: January 28, 2004

Work File: BP1

## TEST RESULTS

Lab Temperature: 24 C

HICd: 571.8

Lab Humidity: 15 %

HIC (36ms): 537.3

Velocity at Impact: 23.54 KPH

t1: 2.1 msec

t2: 12.6 msec

Free Flight Distance: 211.45 mm

Duration: 10.5 msec

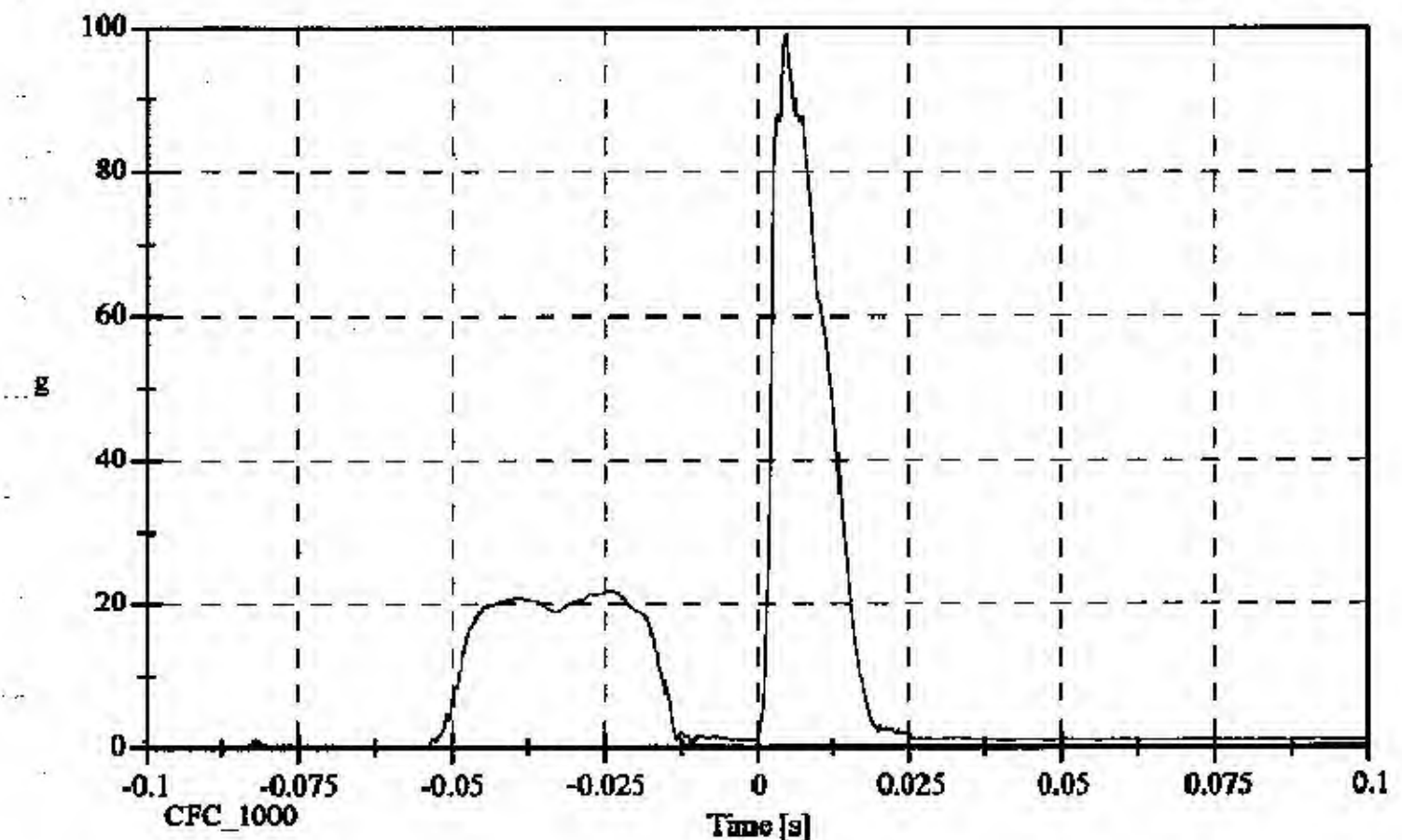
Average Acceleration: 8.8 g

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 99.2 [g] at 0.005 [s]

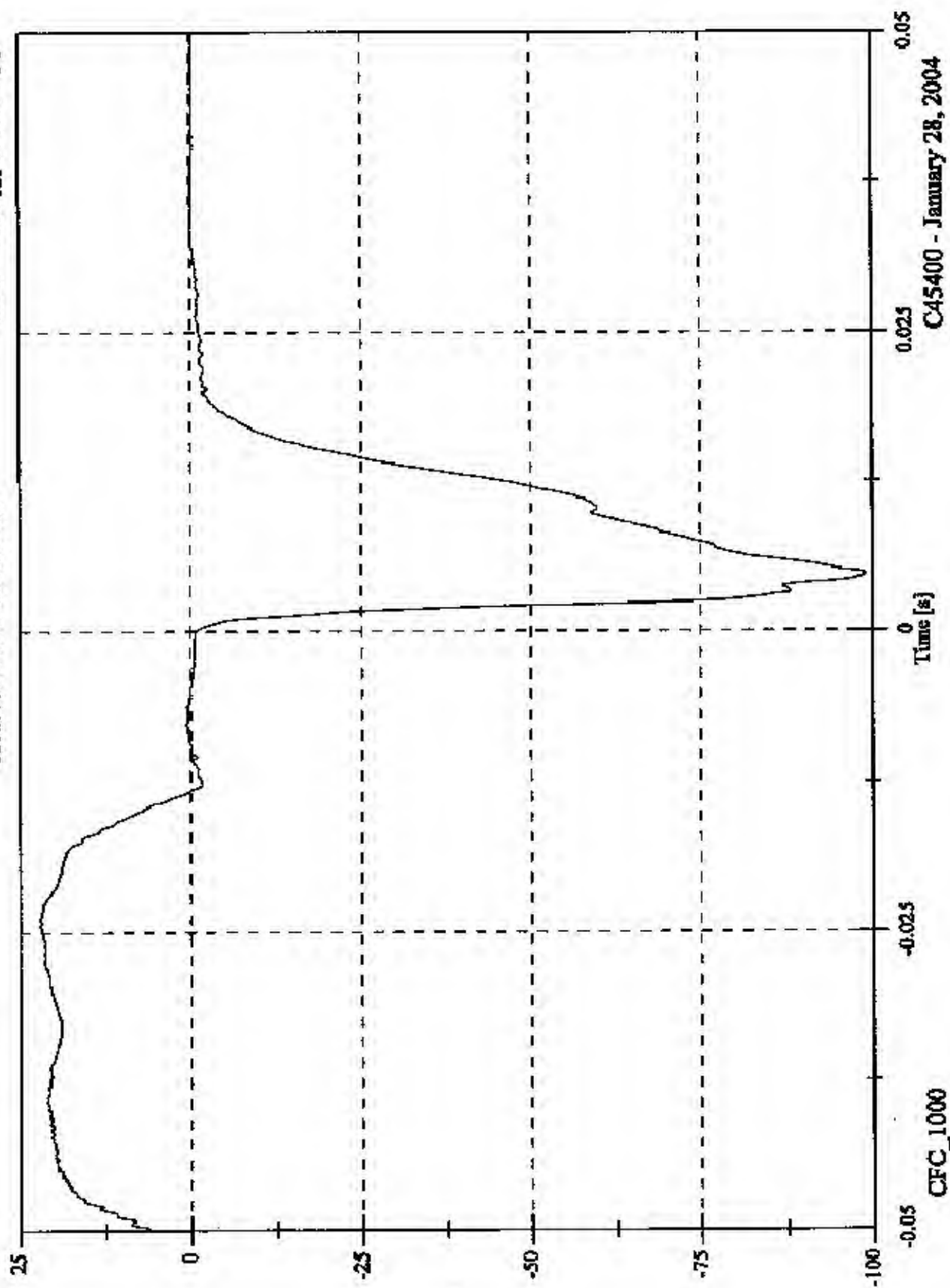
Min: 0.0 [g] at -0.057 [s]



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform X Acceleration

Max: 22.0 [g] at -0.024 [s]  
Min: -99.1 [g] at 0.005 [s]

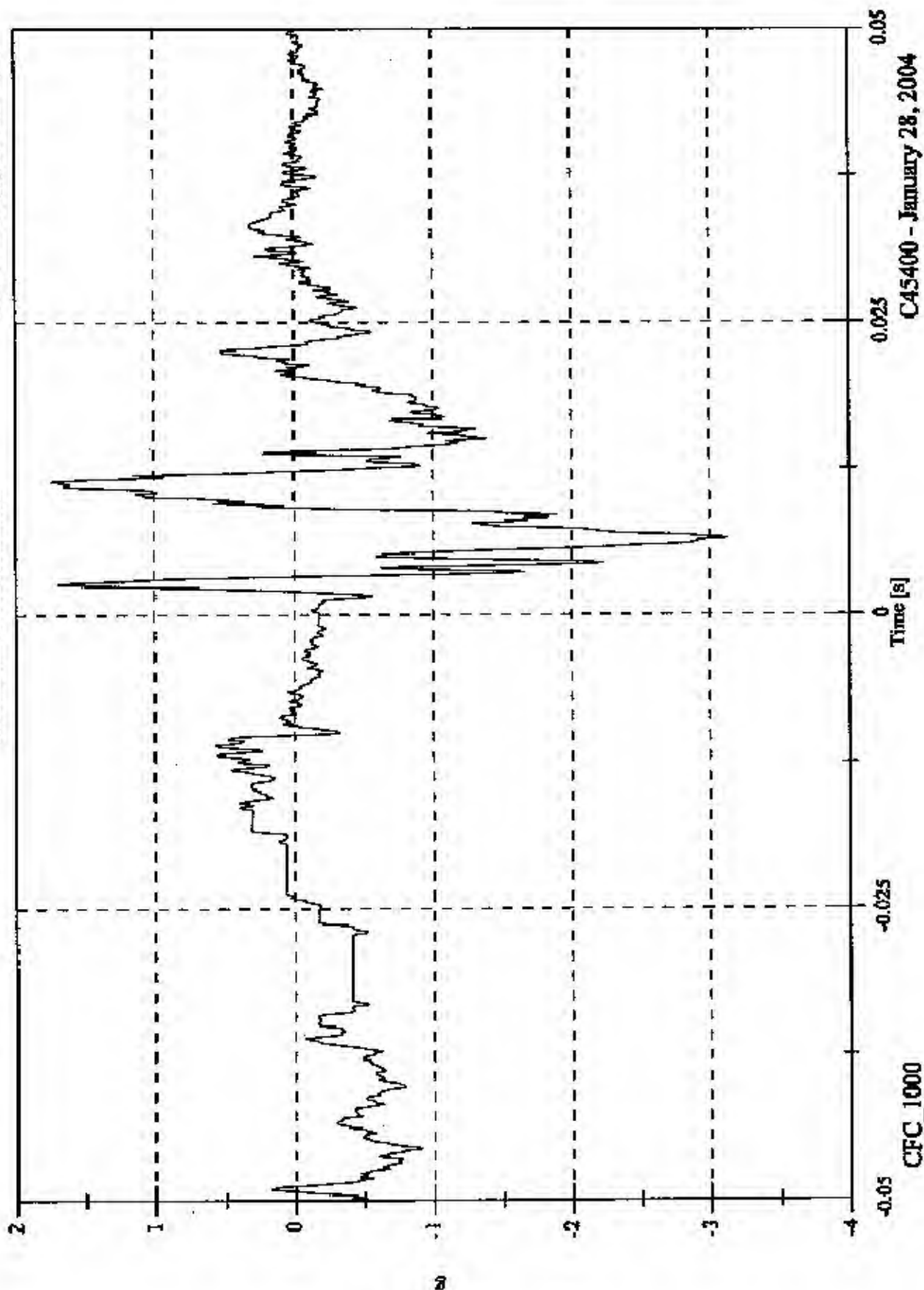


C45400 - January 28, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 1.7 [g] at 0.011 [s]  
Min: -3.1 [g] at 0.007 [s]

Headform Y Acceleration



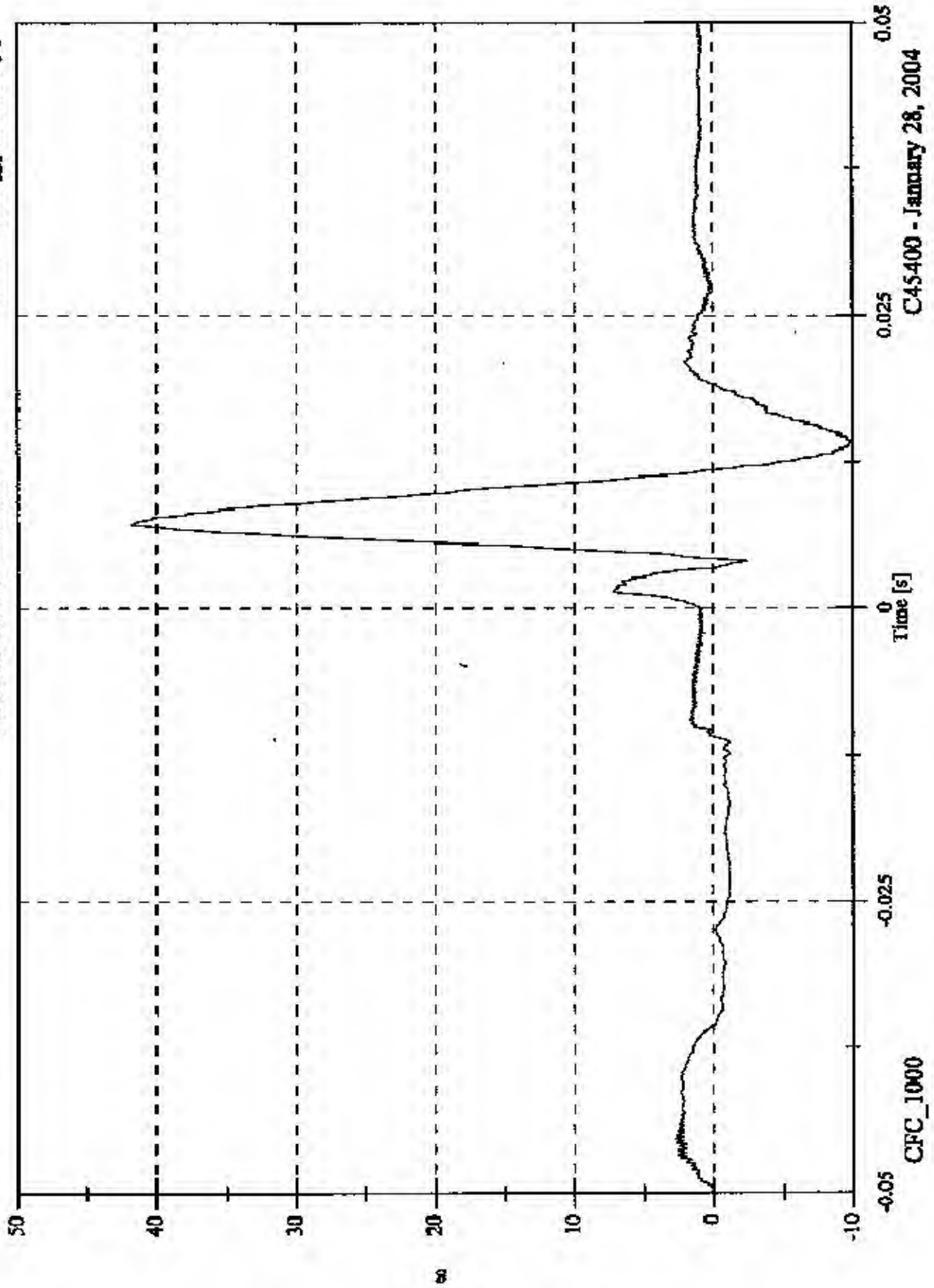
CFC\_1000

C45400 Passenger Side BPI Impact Plot #2

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 41.8 [g] at 0.007 [s]  
Min: -10.0 [g] at 0.014 [s]

Headform Z Acceleration



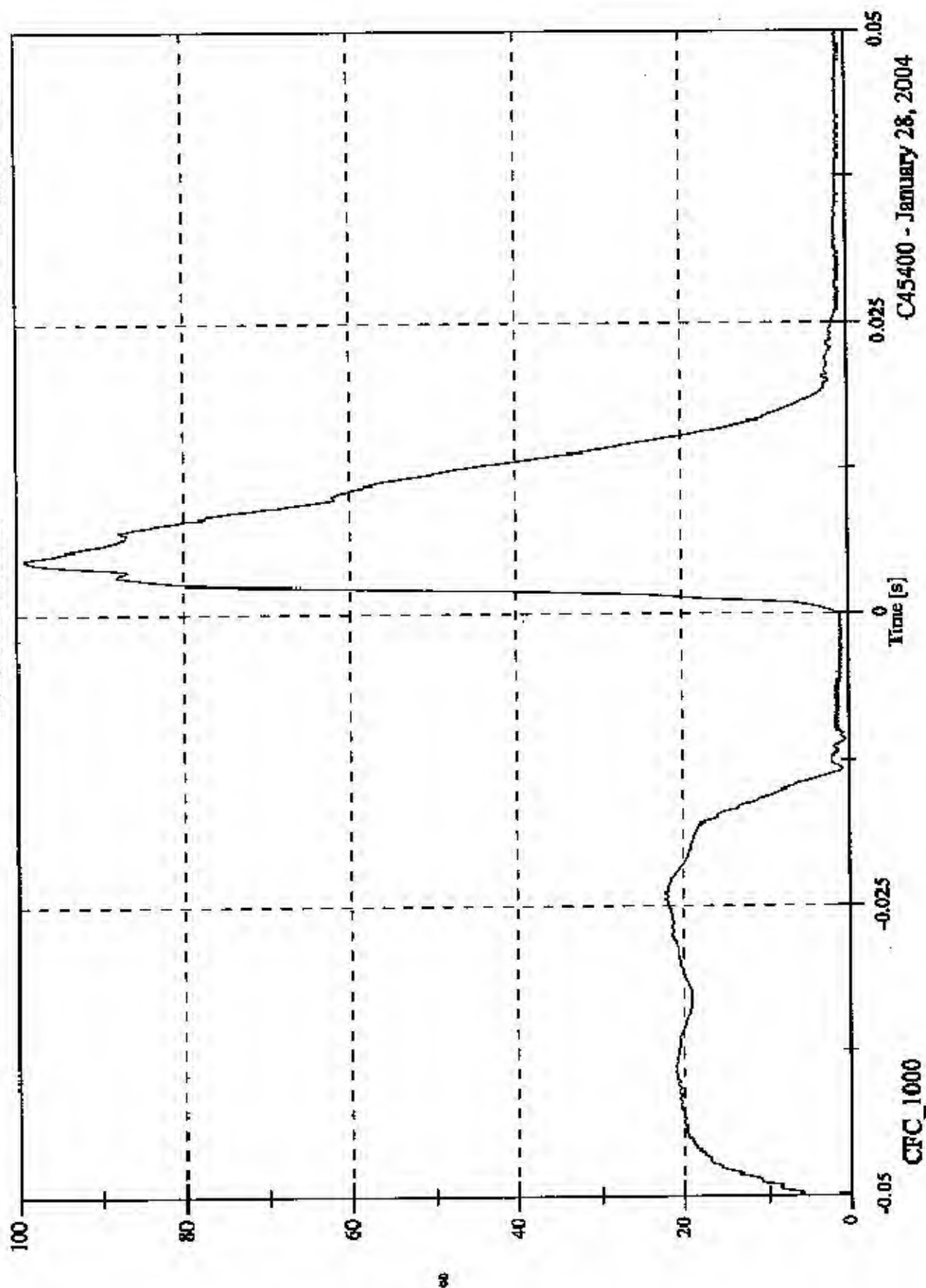
C45400 Passenger Side BP1 Impact Plot #3



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 99.2 [g] at 0.005 [s]  
Min: 0.5 [g] at -0.011 [s]

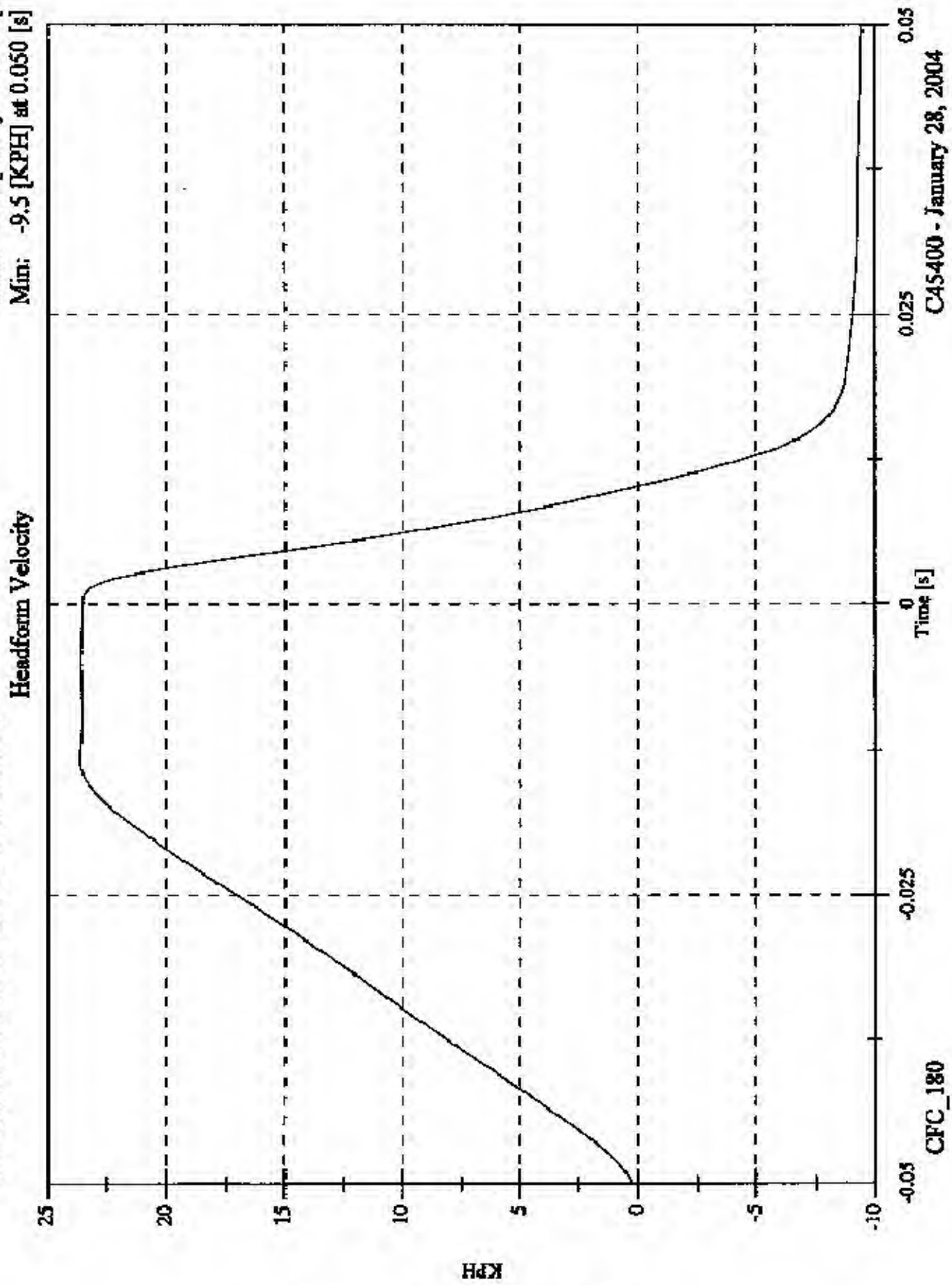
Headform Resultant



C45400 Passenger Side BPI Impact Plot #4

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 23.7 [KPH] at -0.013 [s]  
Min: -9.5 [KPH] at 0.050 [s]

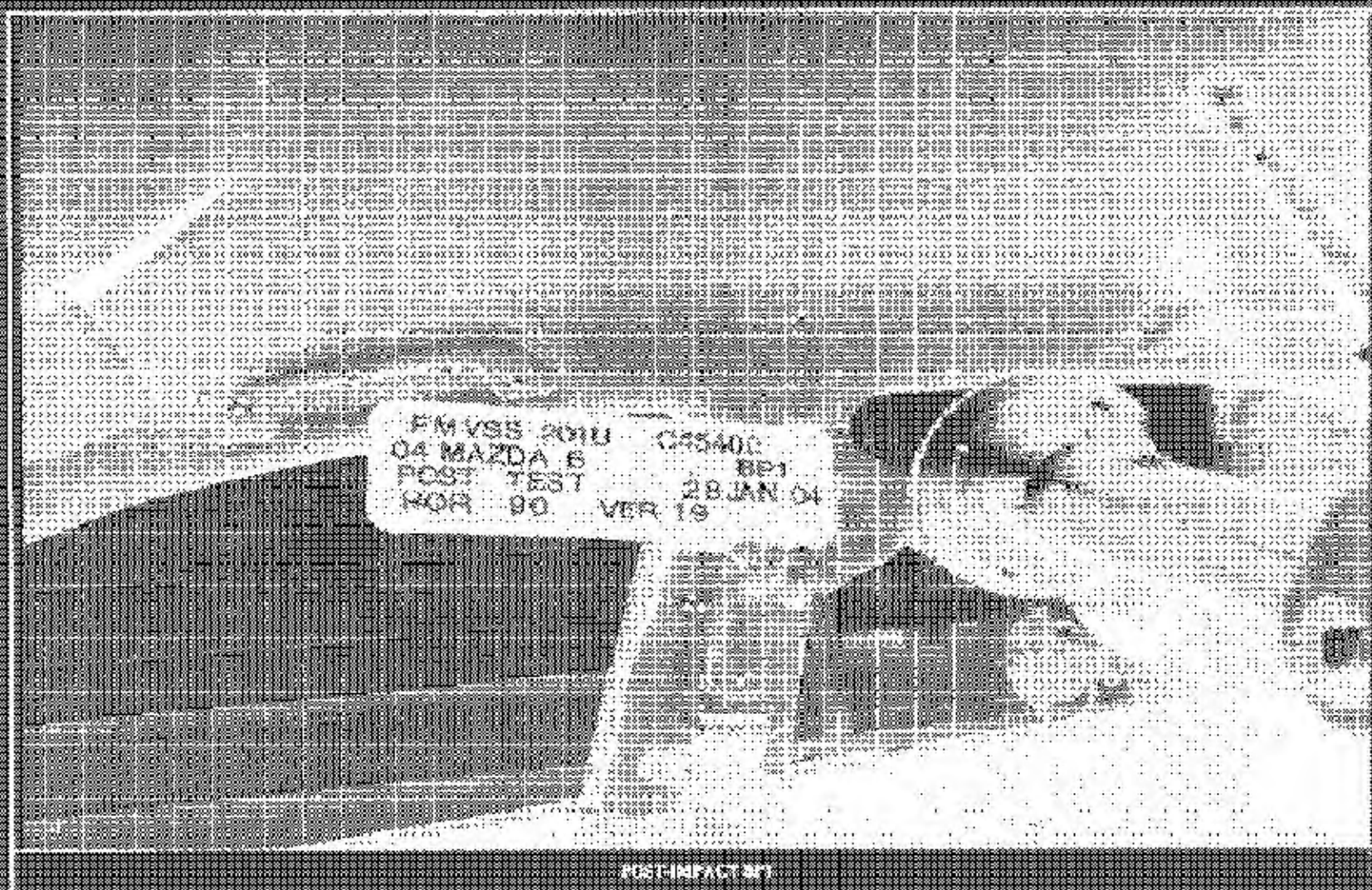


FMVSS 201U  
04 MAZDA 6  
PRE TEST  
HOR 80  
C45400  
BPI  
28 JAN 04  
VER 19

RETRACT BPI

000005



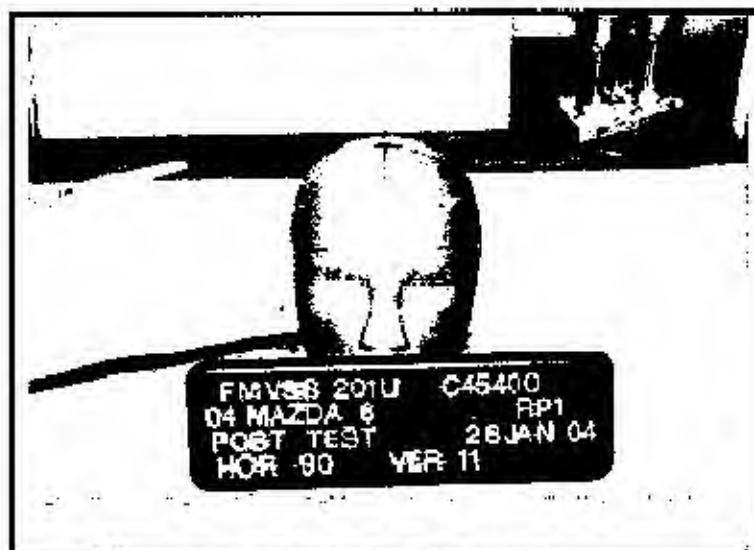


POST-IMPACT BP1

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVFP80C345N22817
DATE OF MANUFACTURE:	09/03 (SEE CERTIFICATION LABEL)
COLOR:	Silver

Test Number:	03
Test Date:	January 28, 2004
Target Location:	Rear Pillar
Target Code:	RP1
Horizontal Impact Angle:	90°
Vertical Impact Angle:	11°
Ambient Temperature:	22°C
Relative Humidity:	15
Time of Impact:	11:55
Headform Number:	0062

Impact Point Description (from lower midpoint on midsagittal line)				
On Centerline	10	<input type="checkbox"/>	mm right	<input checked="" type="checkbox"/> mm left
On Centerline	58		mm up	



POST-IMPACT RP1 HEADFORM

Free Motion HIC	521.3
HIC(d)	559.7
Impact Velocity (kph)	23.73
HIC T1 (msec)	2.9
HIC T2 (msec)	13.0

# FMVSS 201U IMPACT TEST - 2004 Mazda 6 C45400 - RP1

FMH Headform 0062

Location: RP1

Test Date: January 28, 2004

Work File: RP1

## TEST RESULTS

Lab Temperature: 22 C

HICd: 559.7

Lab Humidity: 15 %

HIC (36ms): 521.3

Velocity at Impact: 23.73 KPH

t1: 2.9 msec

t2: 13.0 msec

Free Flight Distance: 211.85 mm

Duration: 10.1 msec

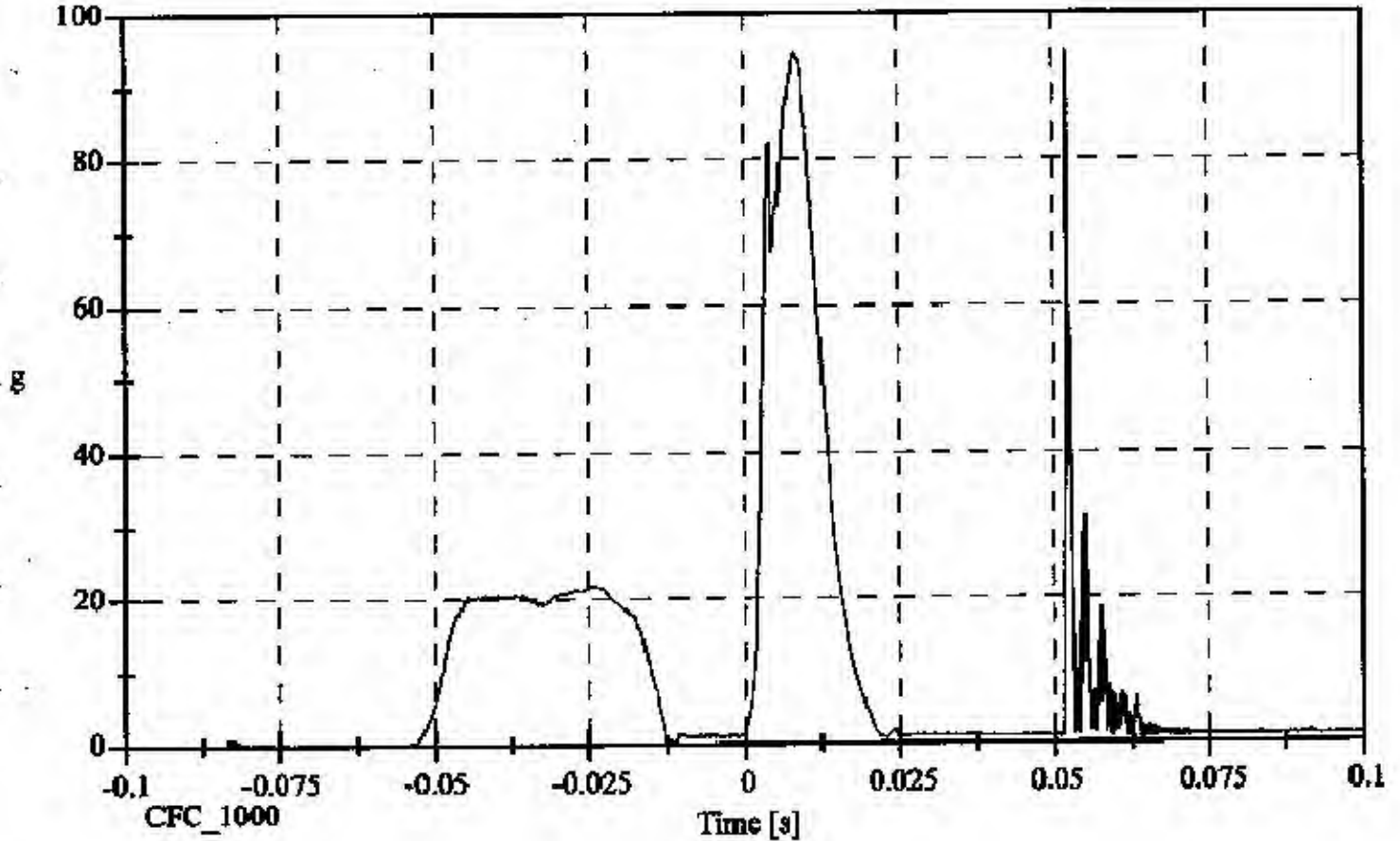
Average Acceleration: 9.4 g

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 94.9 [g] at 0.008 [s]

Min: 0.0 [g] at -0.072 [s]

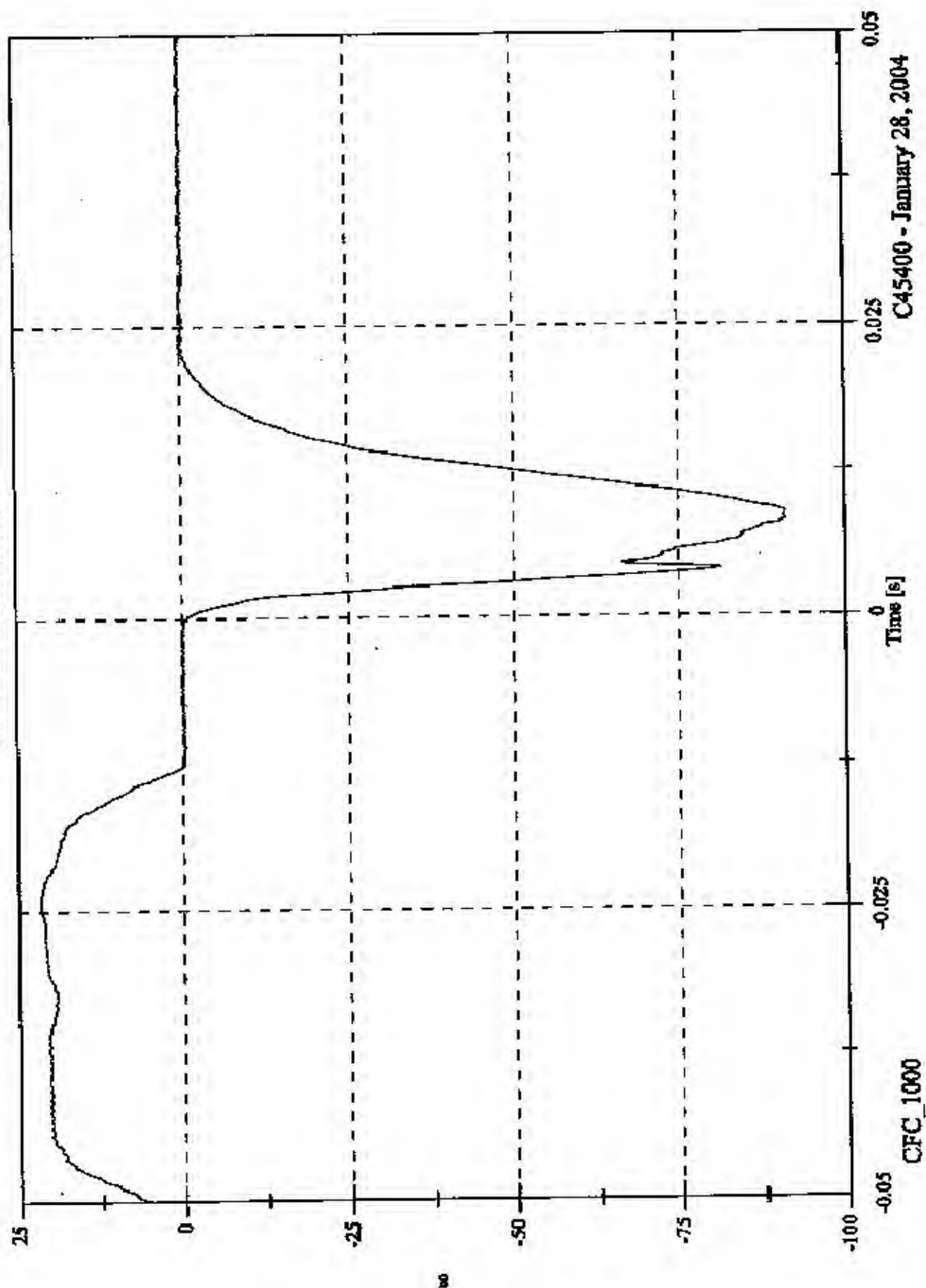




FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform X Acceleration

Max: 21.6 [g] at -0.025 [s]  
Min: -91.2 [g] at 0.008 [s]



CFC 1000

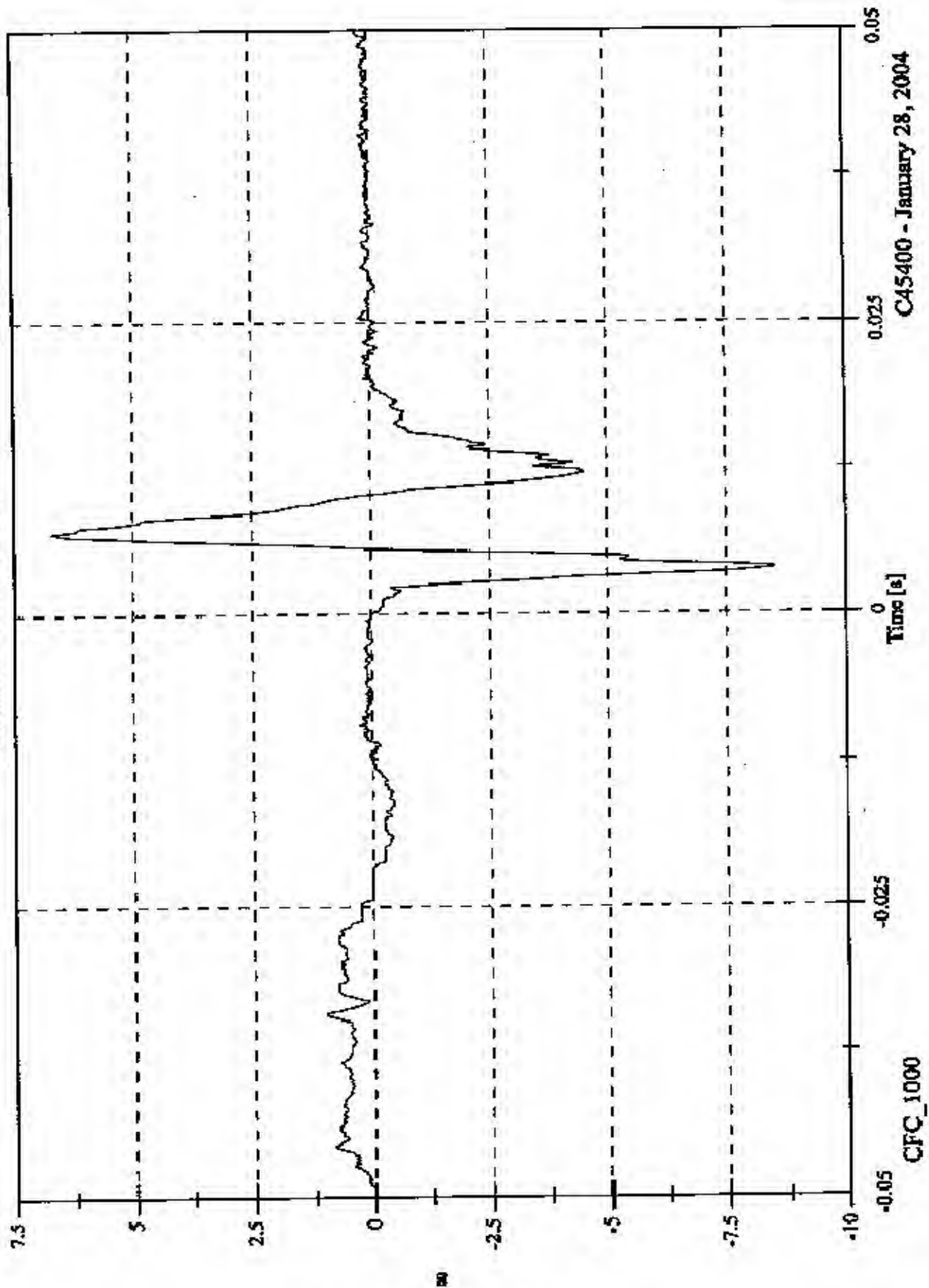
Time [s]

C45400 - January 28, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 6.7 [g] at 0.007 [s]  
Min: -8.5 [g] at 0.004 [s]

Headform Y Acceleration



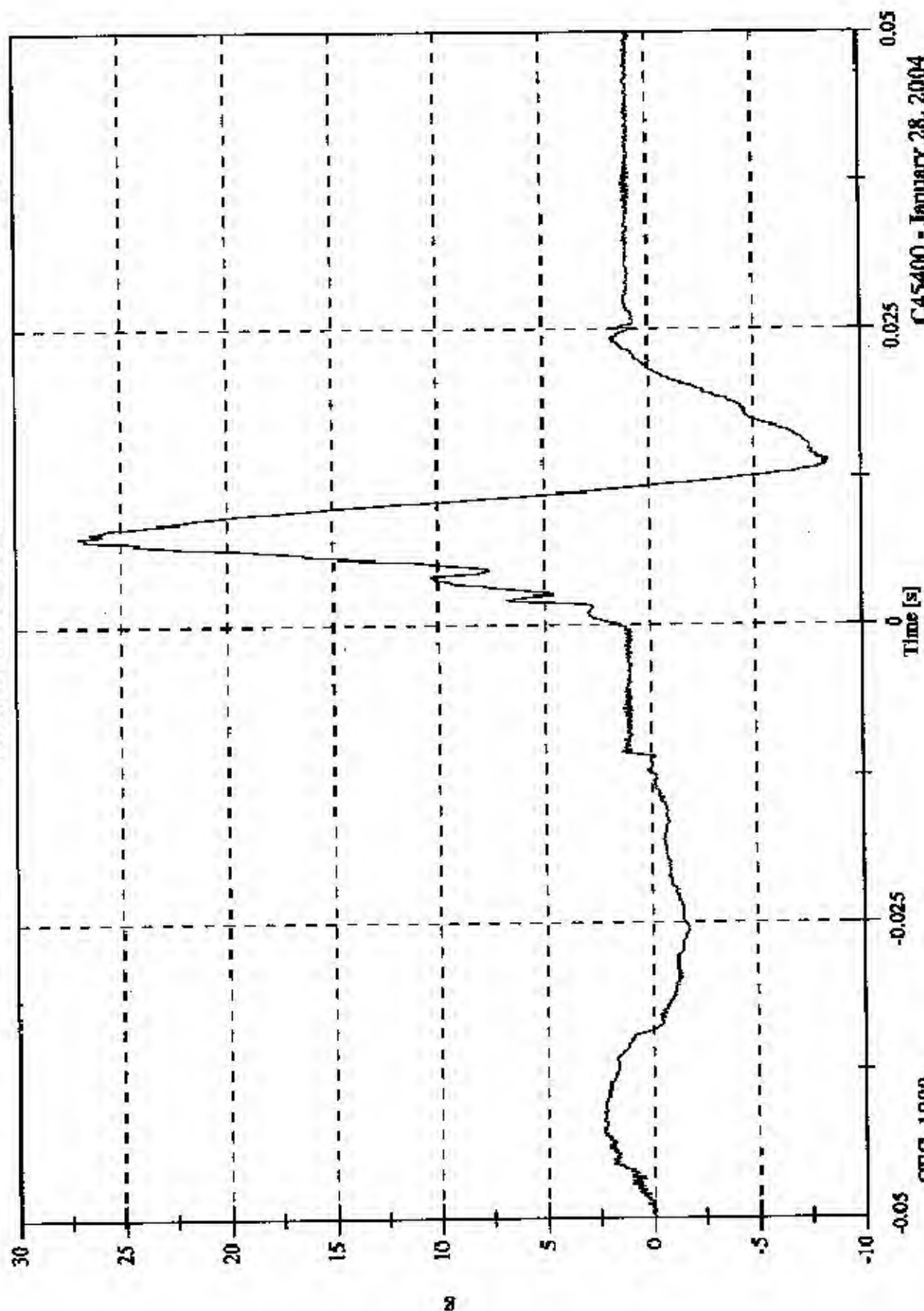
C45400 - January 28, 2004



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 27.0 [g] at 0.008 [s]  
Min: -8.4 [g] at 0.014 [s]

Headform Z Acceleration



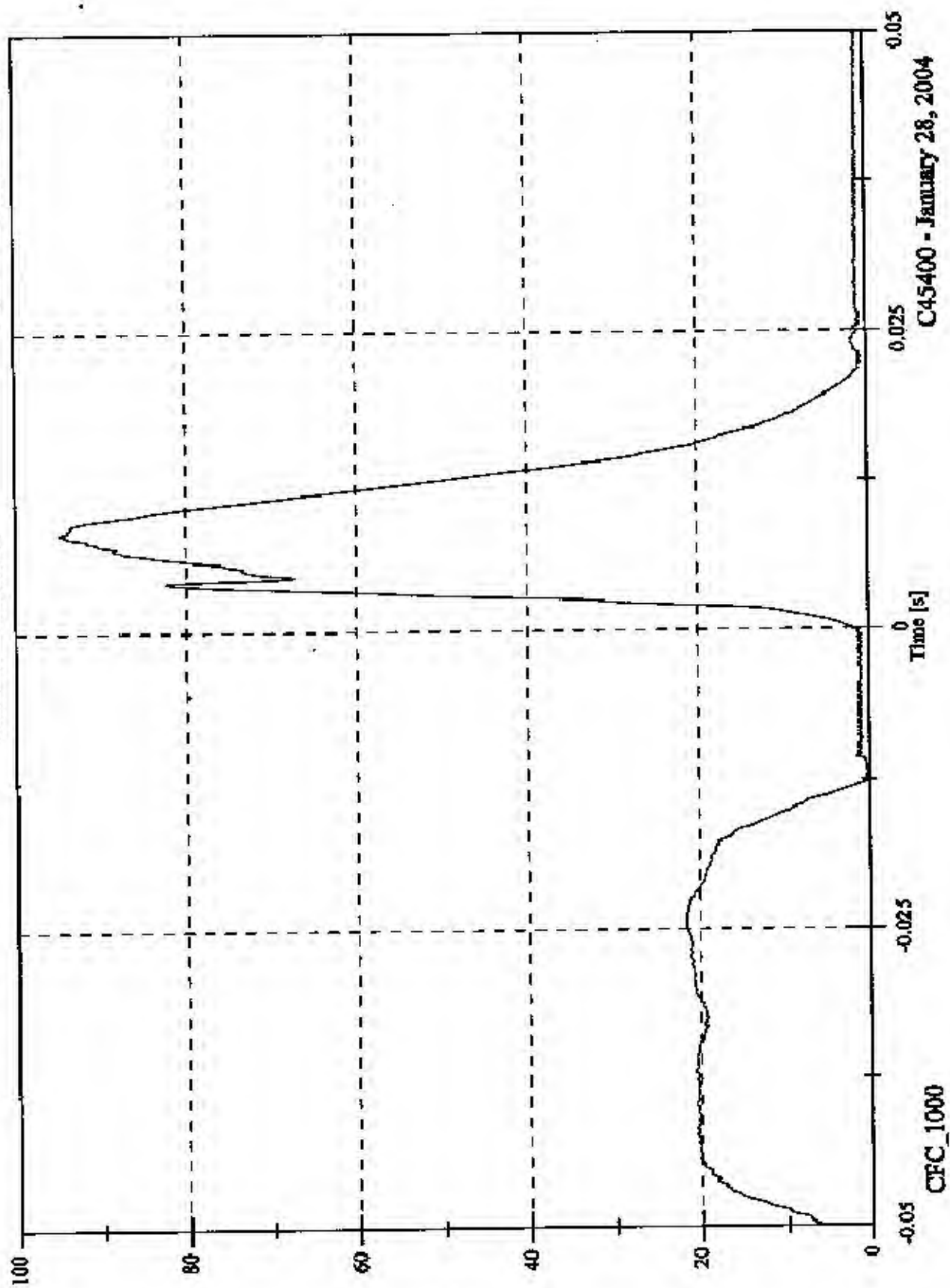
CFC\_1000

C45400 - January 28, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 94.9 [g] at 0.008 [s]  
Min: 0.2 [g] at -0.012 [s]

Headform Resultant



CFC\_1000

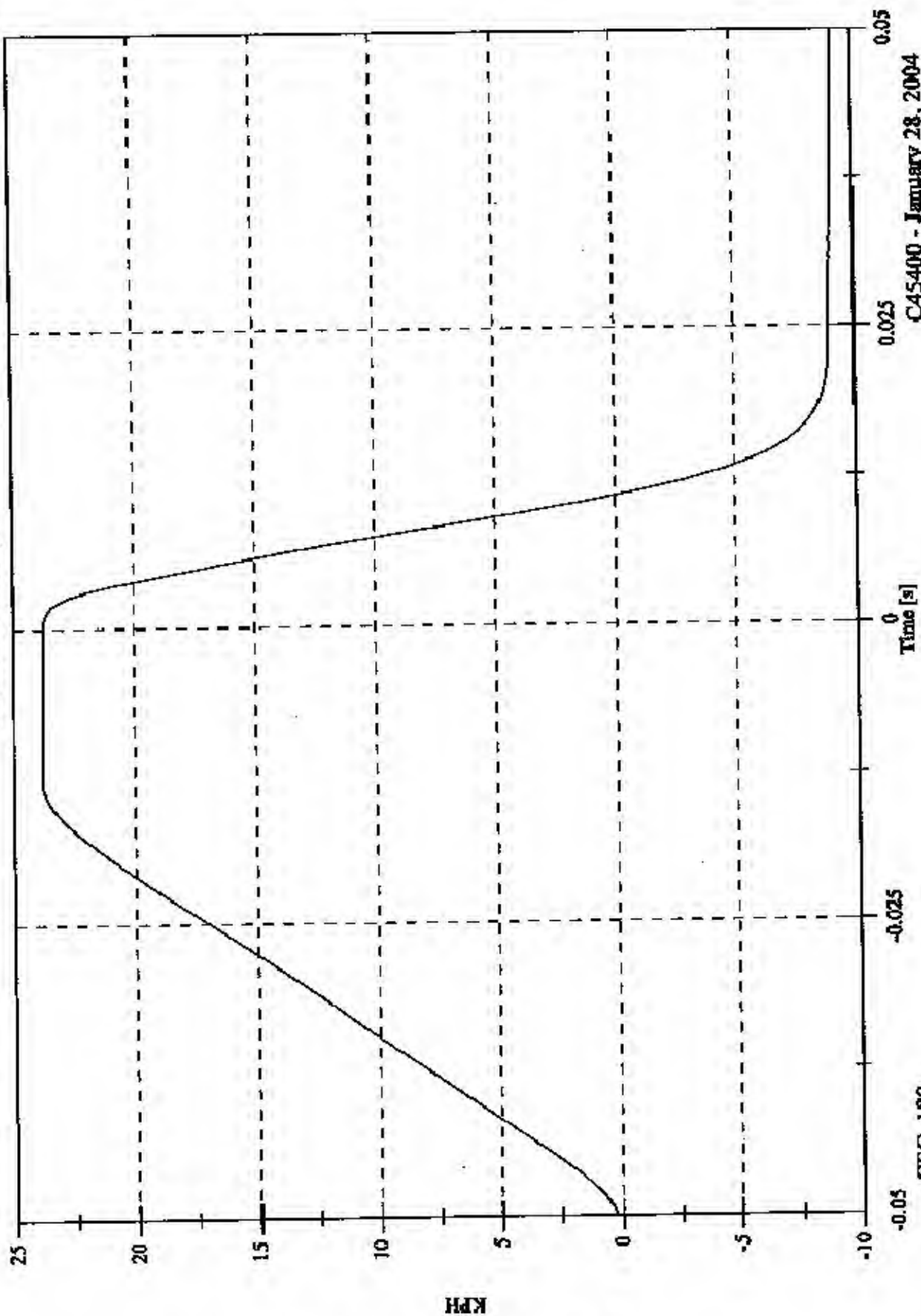
Time [s]

C45400 - January 28, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 23.8 [KPH] at -0.012 [s]  
Min: -9.1 [KPH] at 0.050 [s]

Headform Velocity



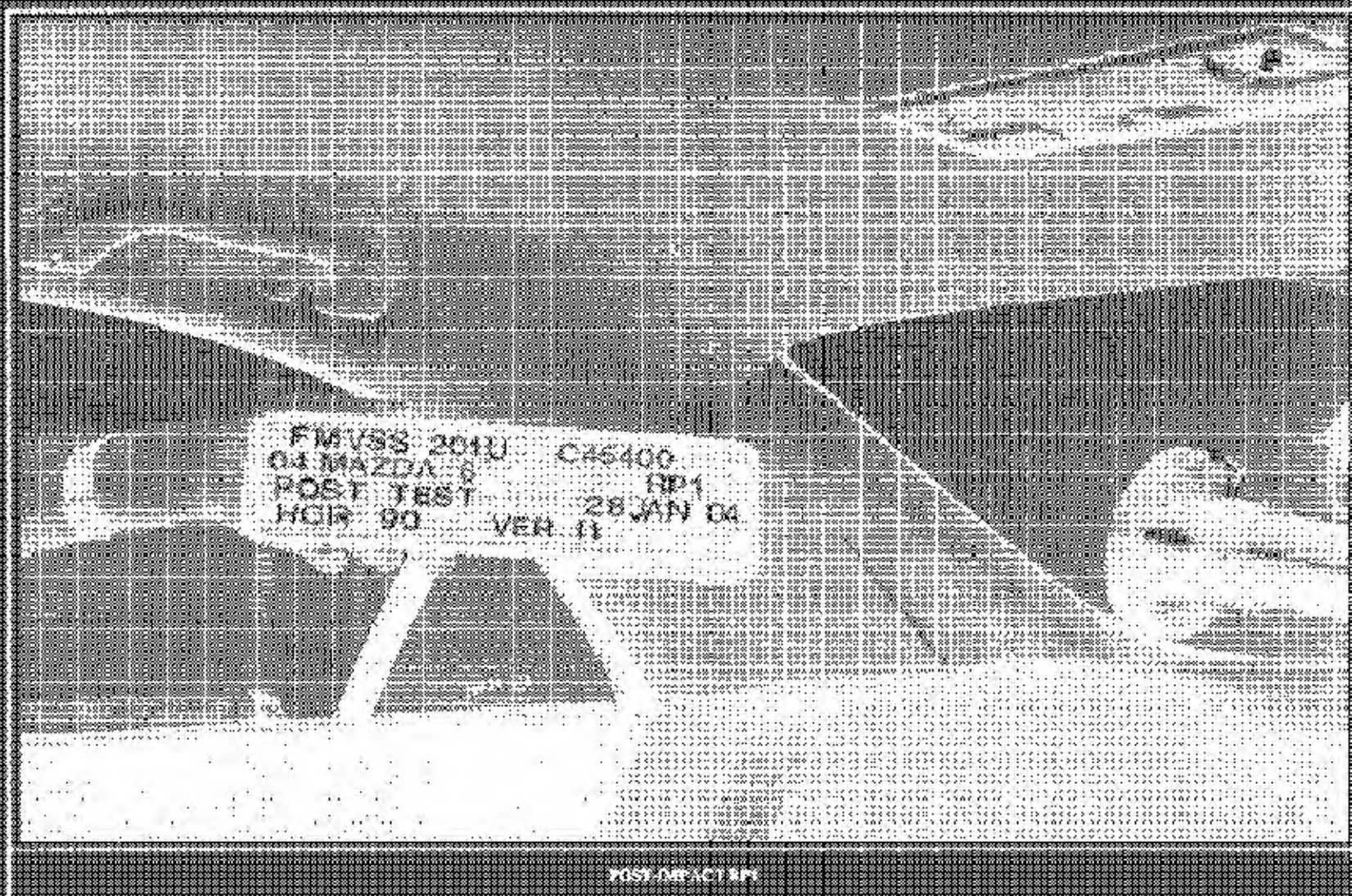
CFC\_180

C45400 - January 28, 2004









POST-TEST REPORT

1019-05

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVFP80C345N22817
DATE OF MANUFACTURE:	DSV03(SEE CERTIFICATION LABEL)
COLOR:	Silver

Test Number:	04
Test Date:	January 28, 2004
Target Location:	A-Pillar
Target Code:	AP3
Horizontal Impact Angle:	155°
Vertical Impact Angle:	39°
Ambient Temperature:	22°C
Relative Humidity:	15
Time of Impact:	13:40
Headform Number:	0355

Impact Point Description (from lower midpoint on midsagittal line)			
On Centerline	8	mm right	x mm left
On Centerline	38	mm up	



POST-IMPACT AP3 HEADFORM

Free Motion HIC	520.2
HIC(d)	558.9
Impact Velocity (kph)	23.42
HIC T1 (msec)	1.1
HIC T2 (msec)	6.8



# FMVSS 201U IMPACT TEST - 2004 Mazda 6 C45400 - AP3

FMH Headform 0355

Location: AP3

Test Date: January 28, 2004

Work File: AP3

## TEST RESULTS

Lab Temperature: 22 C

HICd: 558.9

Lab Humidity: 15 %

HIC (36ms): 520.2

Velocity at Impact: 23.42 KPH

t1: 1.1 msec

t2: 6.8 msec

Free Flight Distance: 222.92 mm

Duration: 5.8 msec

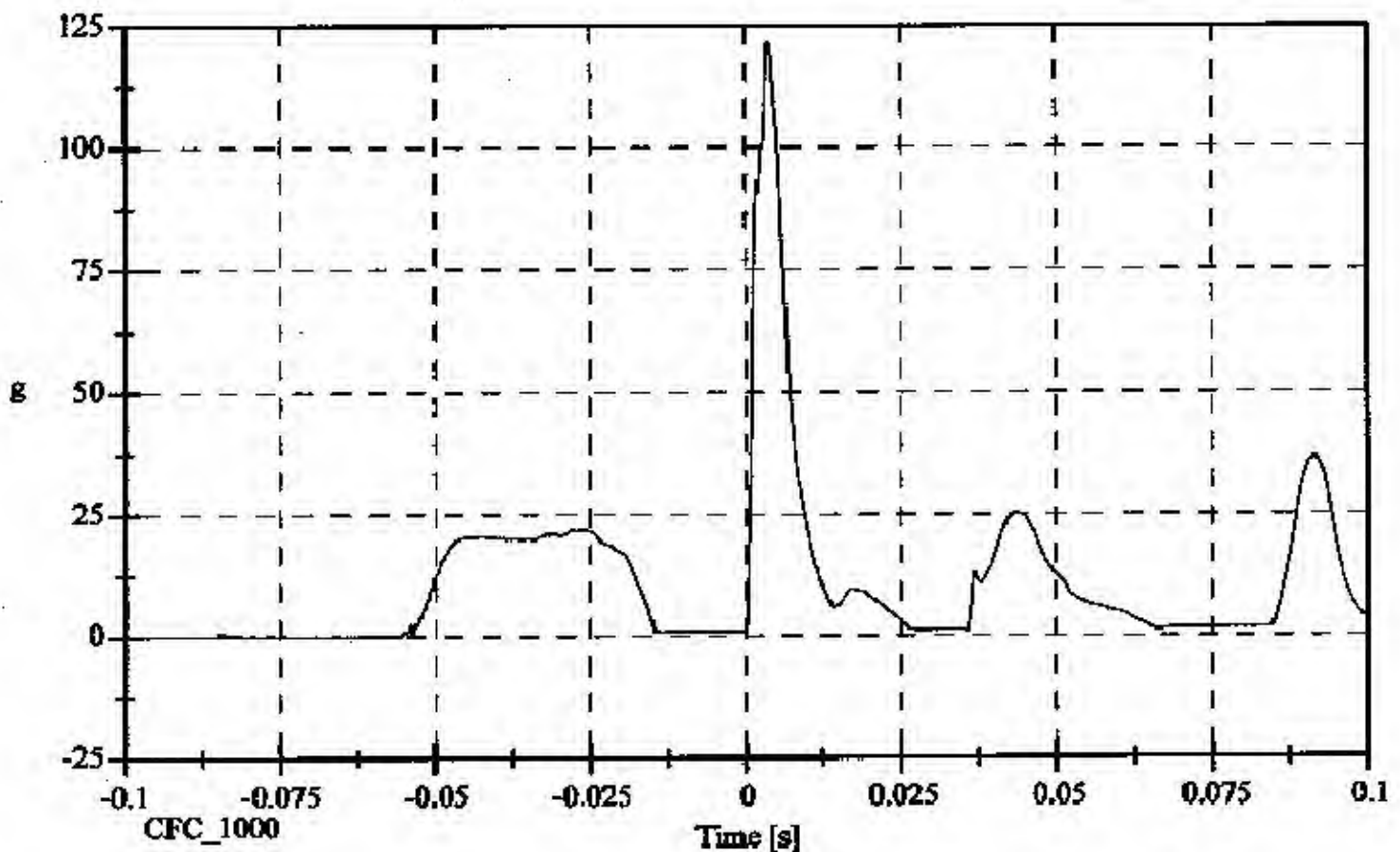
Average Acceleration: 11.0 g

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 121.8 [g] at 0.004 [s]

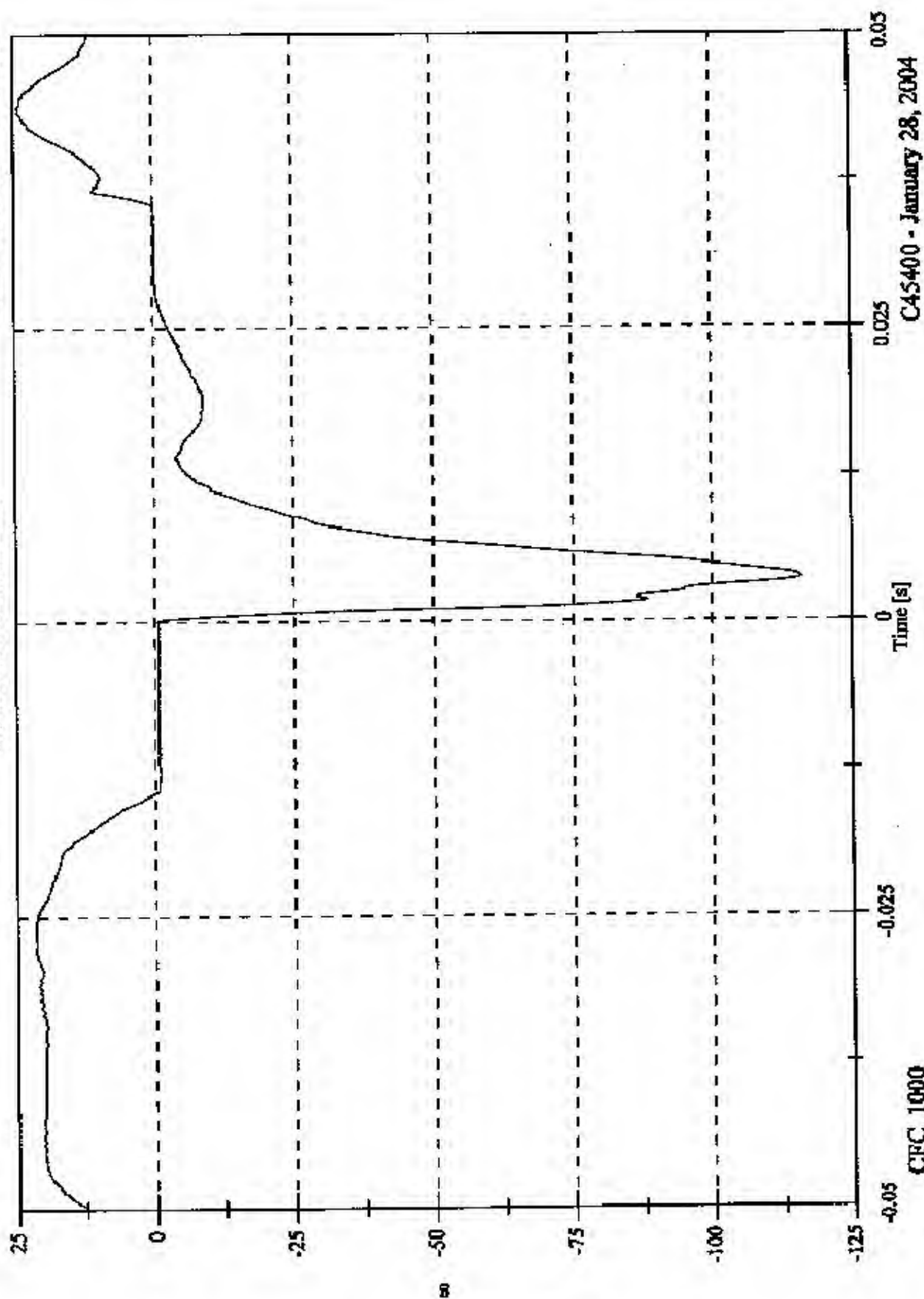
Min: -0.0 [g] at -0.099 [s]



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform X Acceleration

Max: 24.2 [g] at 0.044 [s]  
Min: -115.9 [g] at 0.004 [s]



CFC\_1000

Time [s]

C45400 - January 28, 2004

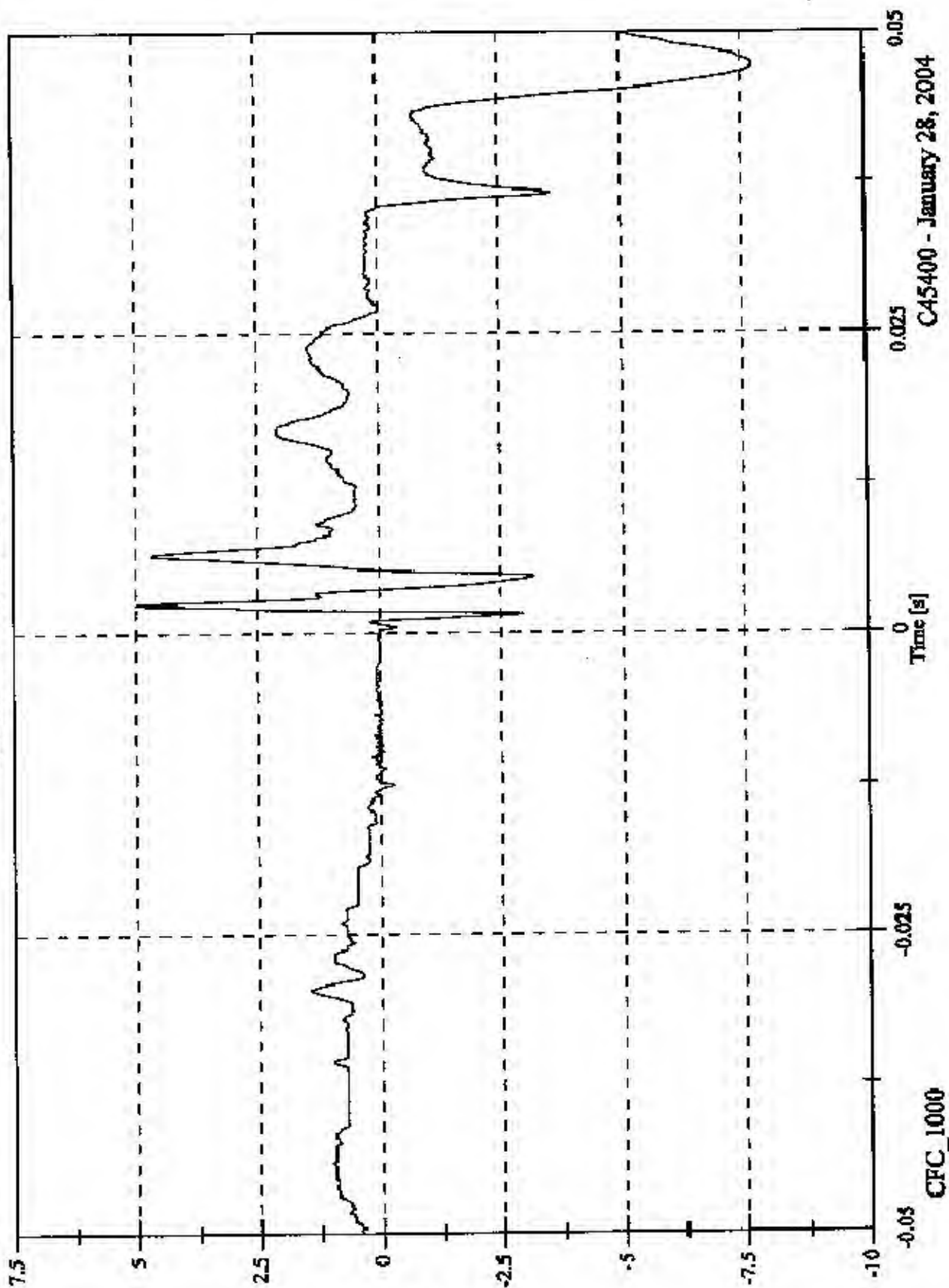
C45400 Passenger Side AP3 Impact Plot #1

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Y Acceleration

Max: 5.0 [g] at 0.002 [s]

Min: -7.7 [g] at 0.047 [s]



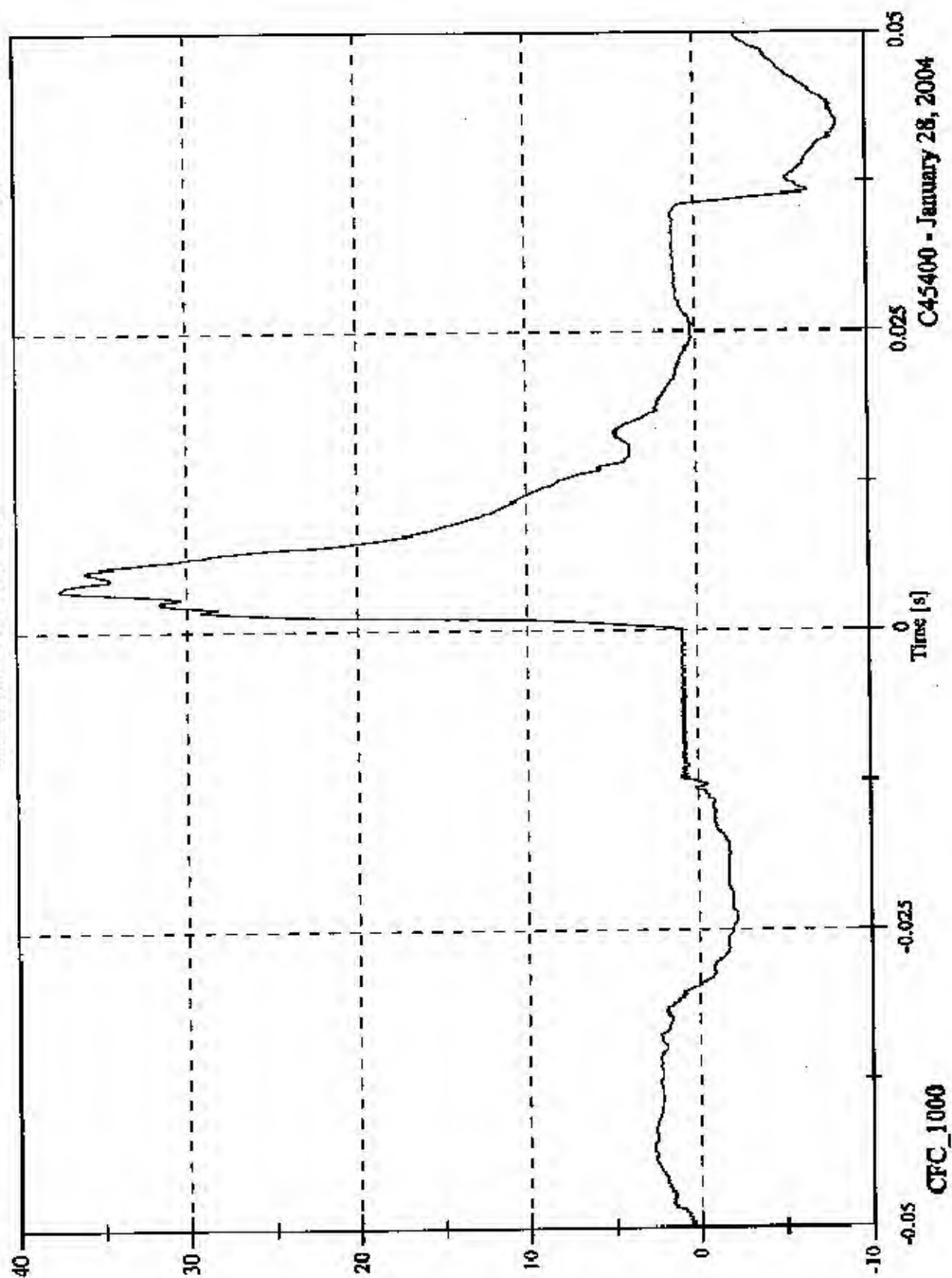
C45400 - January 28, 2004

C45400 Passenger Side AP3 Impact Plot #2

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Z Acceleration

Max: 37.5 [g] at 0.004 [s]  
Min: -8.4 [g] at 0.043 [s]



CFC\_1000

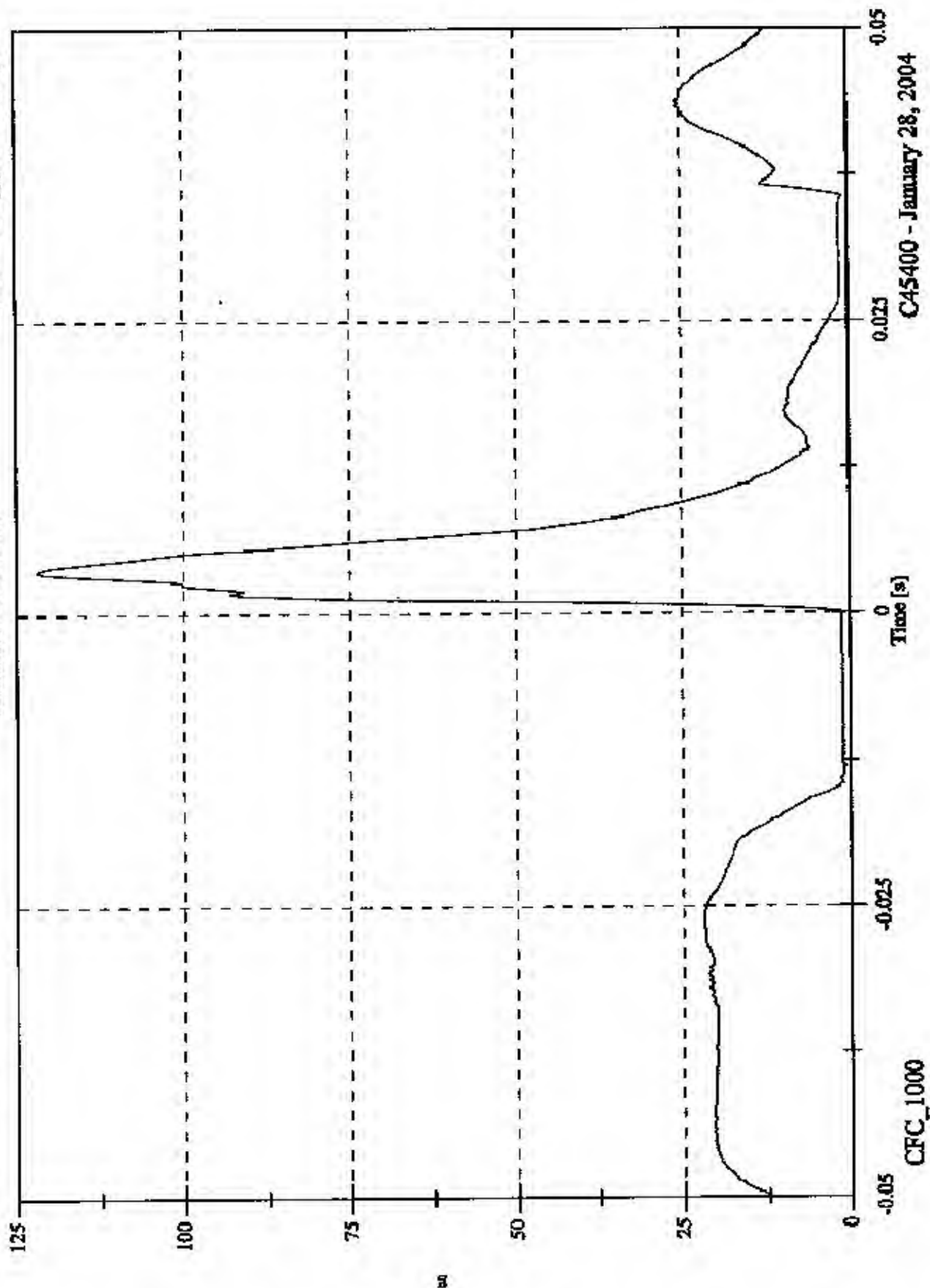
C45400 - January 28, 2004

C45400 Passenger Side AP3 Impact Plot #3

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 121.8 [g] at 0.004 [s]  
Min: 0.8 [g] at -0.013 [s]

Headform Resultant

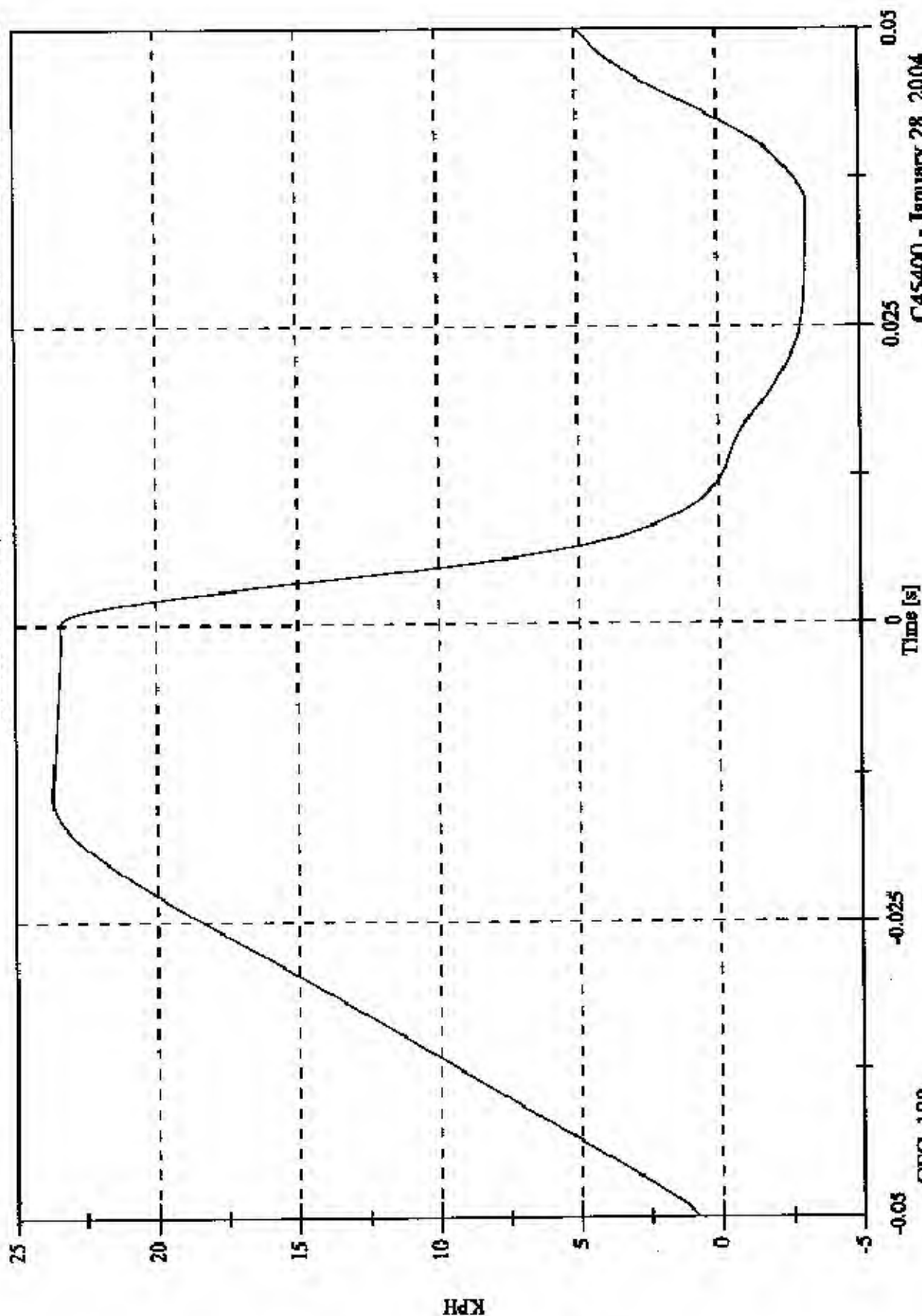


C45400 Passenger Side AP3 Impact Plot #4

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 23.7 [KPH] at -0.014 [s]  
Min: -3.1 [KPH] at 0.035 [s]

Headform Velocity

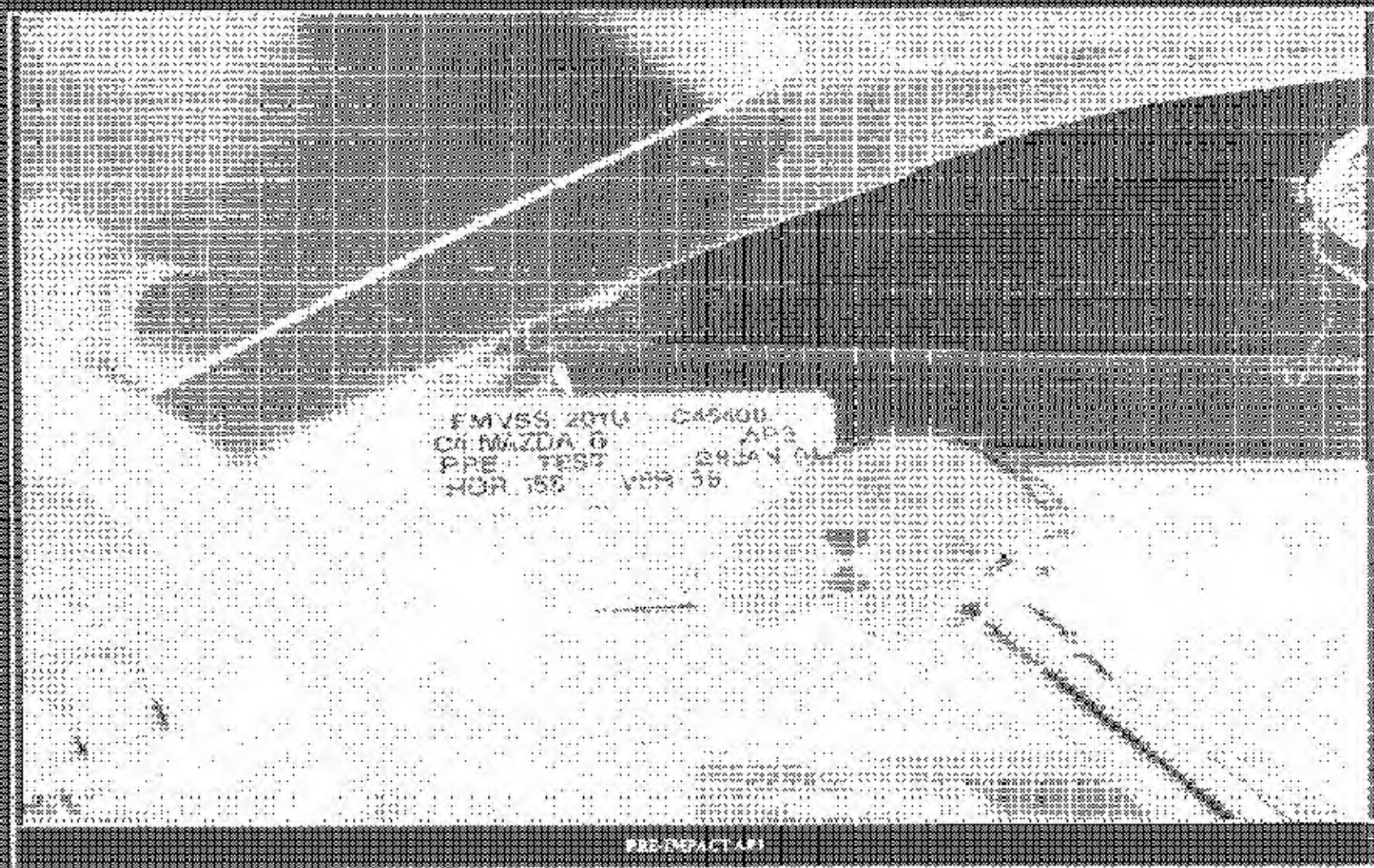


CFC\_180

Time [s]

C45400 - January 28, 2004





END OF PAGE 01

275615



FMVSS 2010 C45400  
04 MAZDA 6 AP3  
POST TEST 23 JAN 04  
HOR 156 VER 39

POST IMPACT 25

8716-01

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVEP80C345N22817
DATE OF MANUFACTURE:	09/03(SEE CERTIFICATION LABEL)
COLOR:	Silver

Test Number:	05
Test Date:	January 28, 2004
Target Location:	A-Pillar
Target Code:	AP1
Horizontal Impact Angle:	112°
Vertical Impact Angle:	31°
Ambient Temperature:	22°C
Relative Humidity:	15
Time of Impact:	10:40
Headform Number:	0805

Impact Point Description (from lower midpoint on midsagittal line)				
On Centerline	20	x	mm right	mm left
On Centerline	13		mm up	



POST-IMPACT AP1 HEADFORM

Free Motion HIC	857.1
HIC(d)	813.0
Impact Velocity (kph)	23.58
HIC T1 (msec)	2.3
HIC T2 (msec)	8.3

# FMVSS 201U IMPACT TEST - 2004 Mazda 6 C45400 - AP1

FMH Headform 805

Location: AP1

Test Date: January 28, 2004

Work File: AP1

## TEST RESULTS

Lab Temperature: 22 C

HICd: 813.0

Lab Humidity: 15 %

HIC (36ms): 857.1

Velocity at Impact: 23.58 KPH

t1: 2.3 msec

t2: 8.3 msec

Free Flight Distance: 218.42 mm

Duration: 6.1 msec

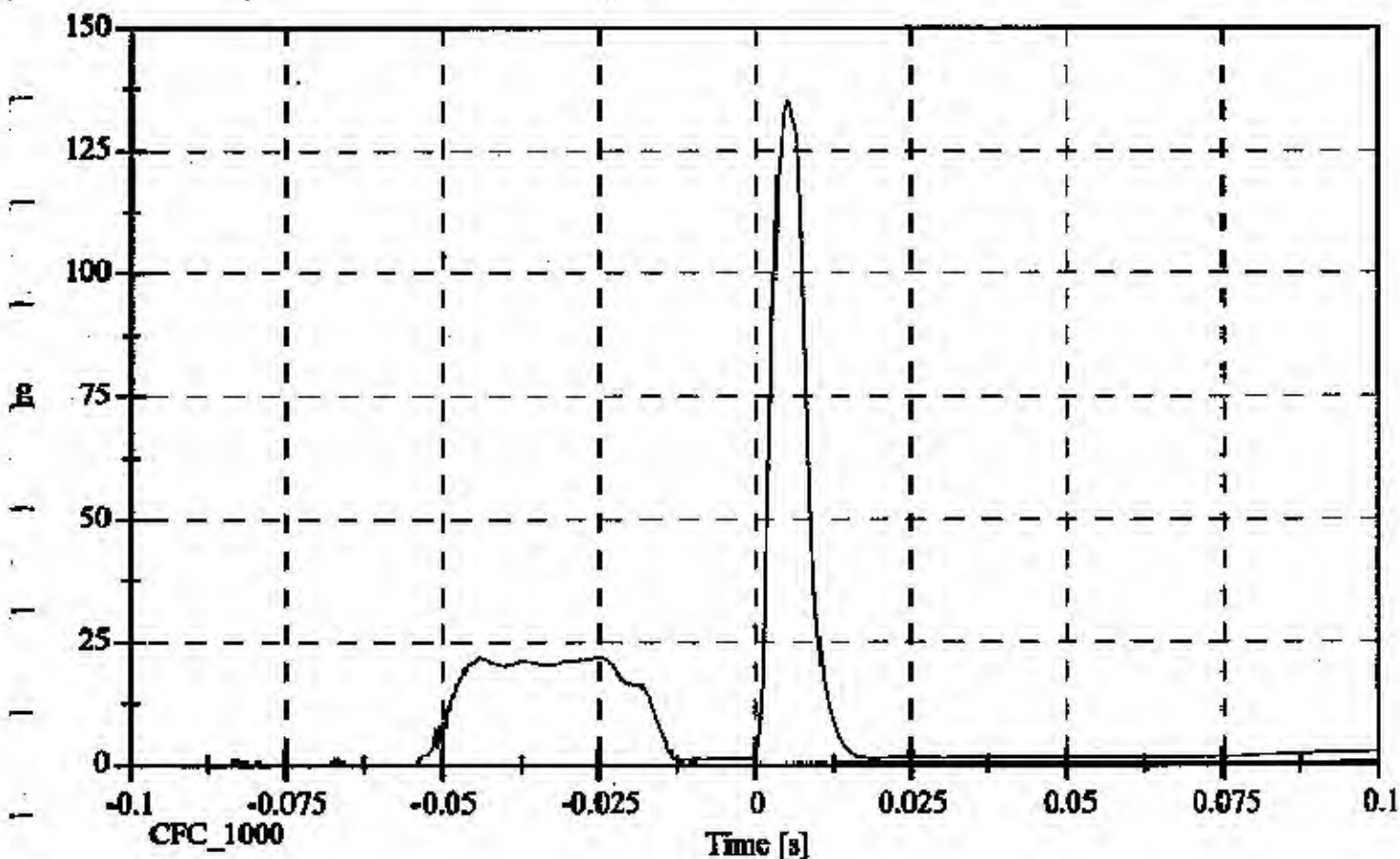
Average Acceleration: 8.5 g

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 135.0 [g] at 0.005 [s]

Min: 0.0 [g] at -0.073 [s]

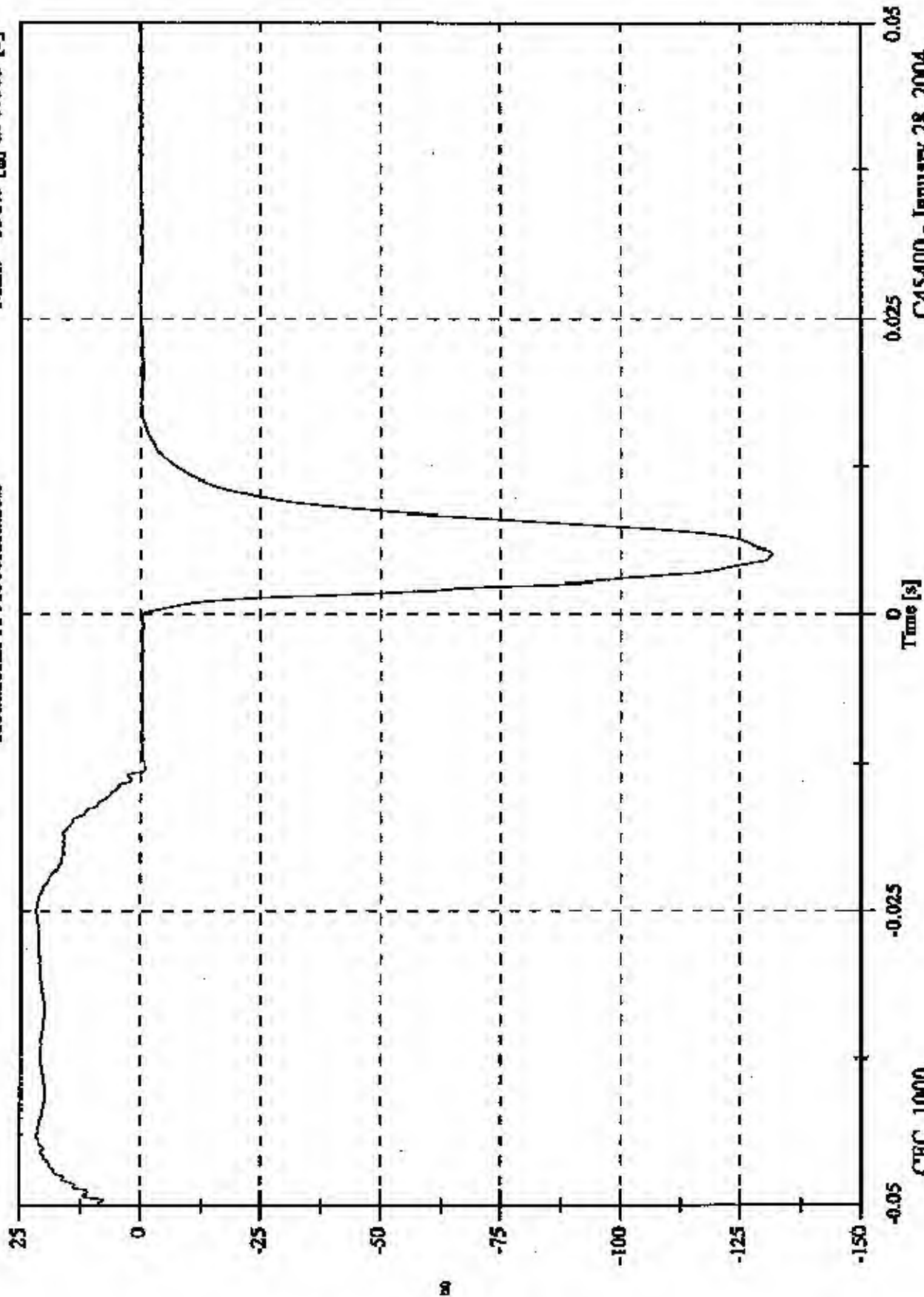




FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 21.8 [g] at -0.025 [s]  
Min: -131.5 [g] at 0.005 [s]

Headform X Acceleration

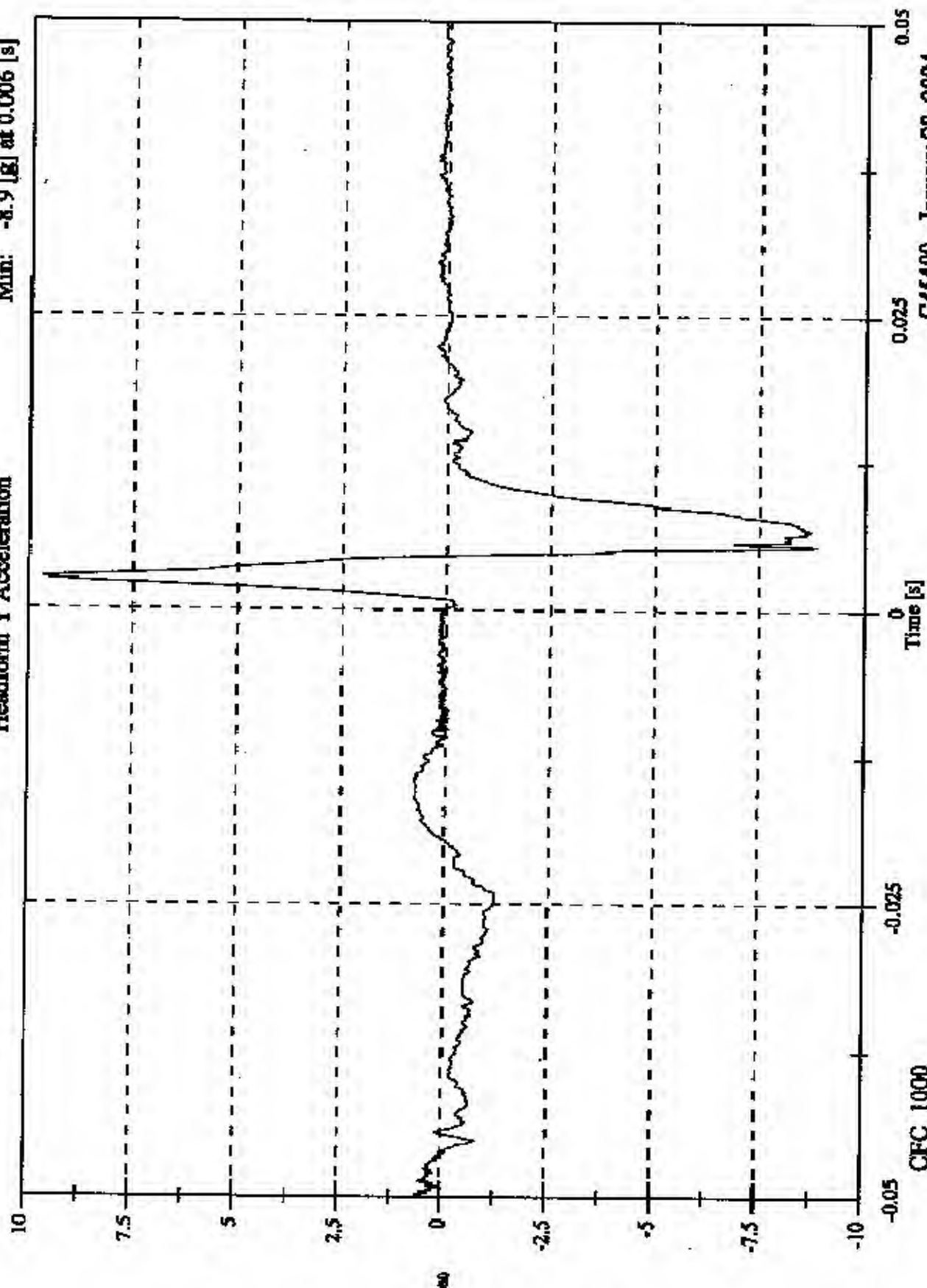


C45400 - January 28, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Y Acceleration

Max: 9.7 [g] at 0.003 [s]  
Min: -8.9 [g] at 0.006 [s]



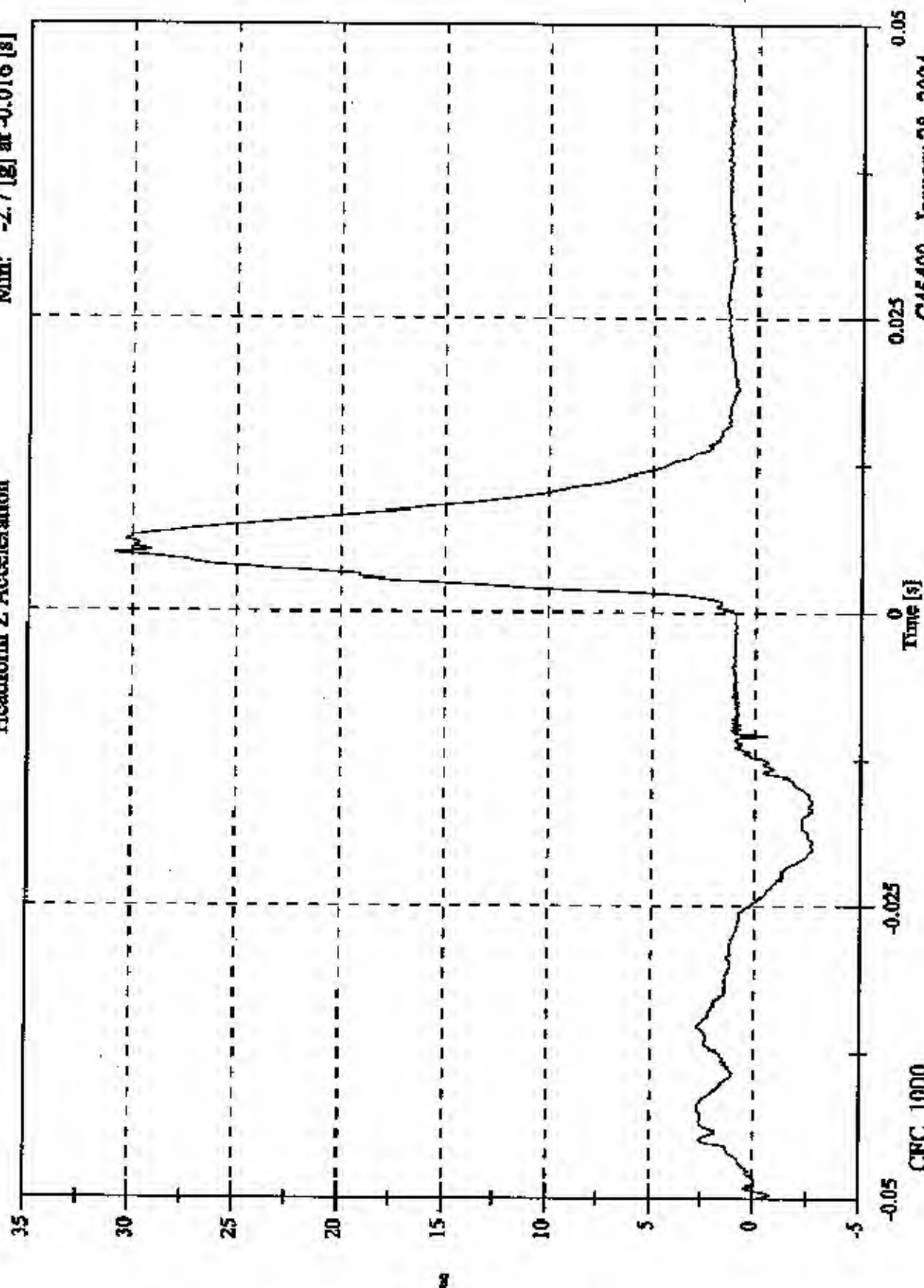
C45400 - January 28, 2004



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Z Acceleration

Max: 30.8 [g] at 0.005 [s]  
Min: -2.7 [g] at -0.016 [s]

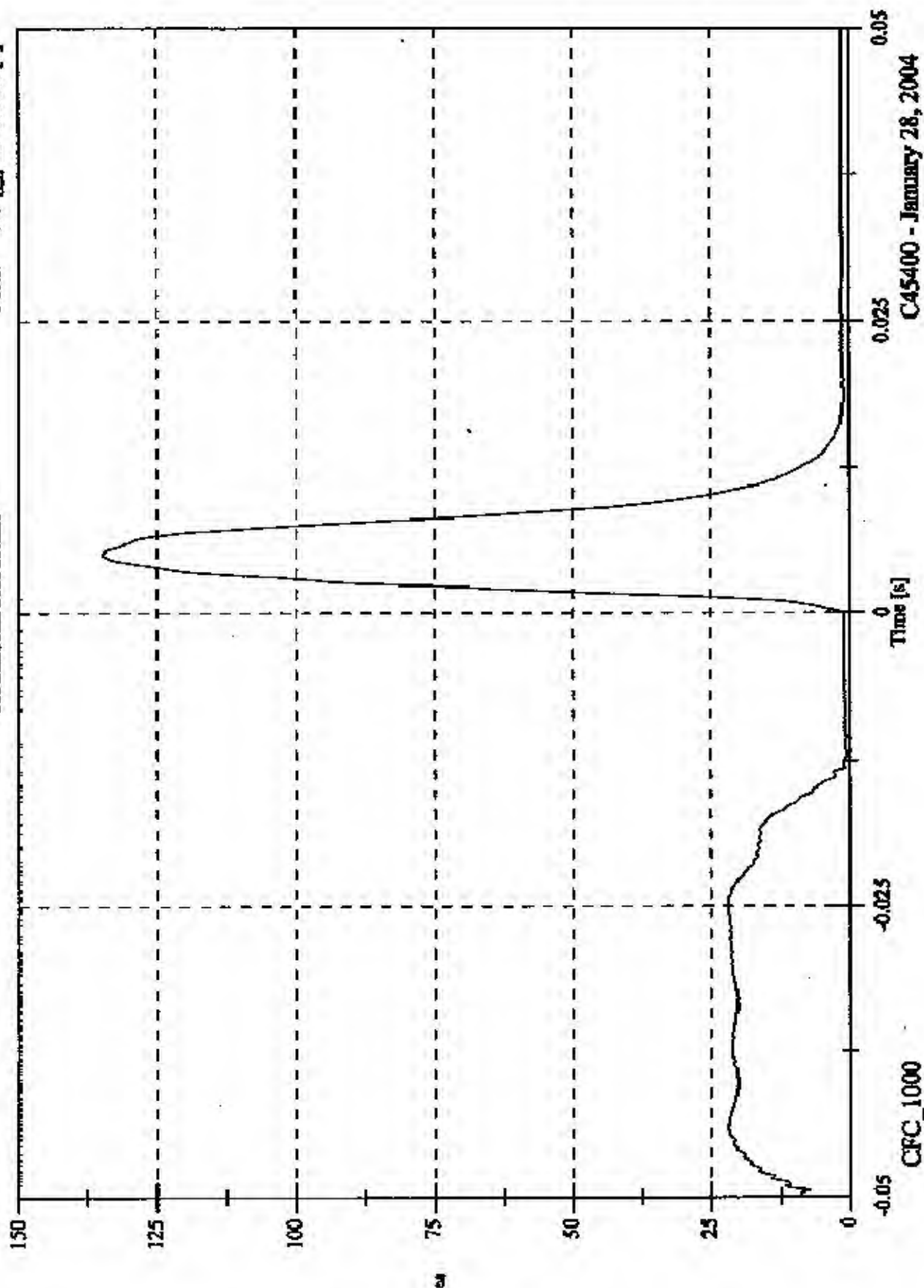


C45400 - January 28, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 135.0 [g] at 0.005 [s]  
Min: 0.5 [g] at -0.011 [s]

Headform Resultant

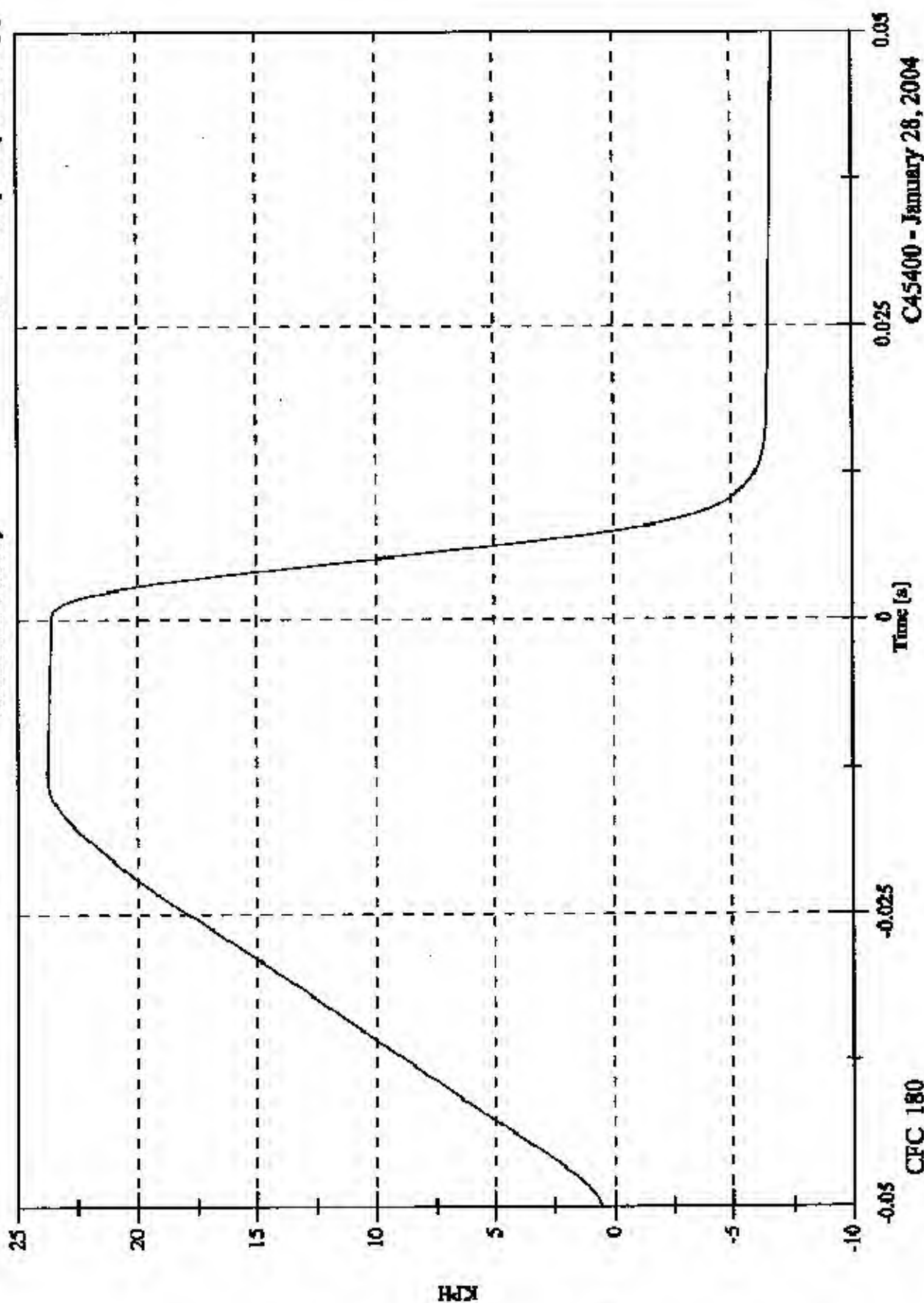


C45400 Passenger Side API Impact Plot #4

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 23.8 [KPH] at -0.013 [s]  
Min: -6.7 [KPH] at 0.050 [s]

Headform Velocity



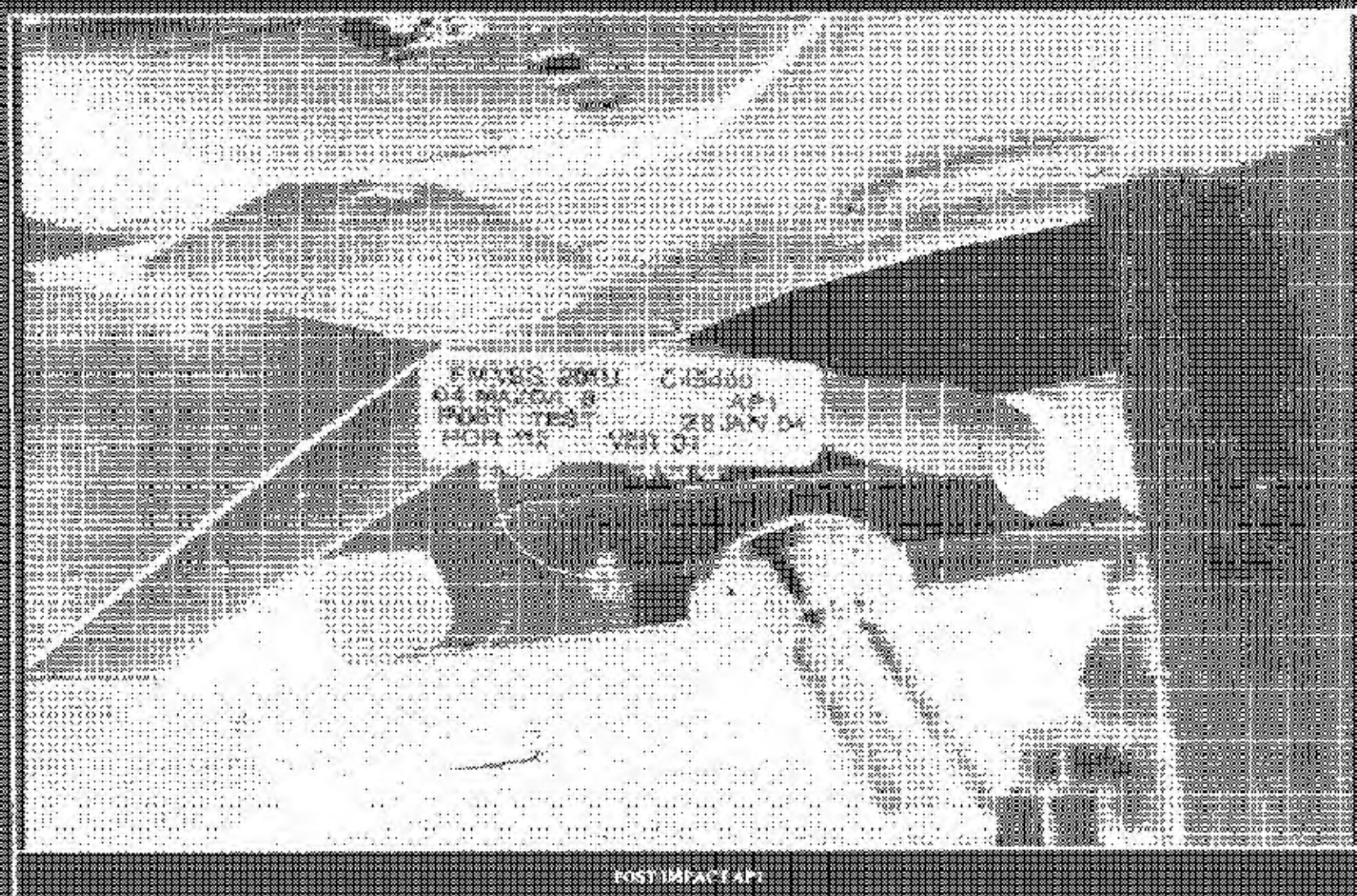
C45400

January 28, 2004









POSTMASTER

8710-05



VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVFP80C345N22817
DATE OF MANUFACTURE:	09/03(SEE CERTIFICATION LABEL)
COLOR:	Silver

Test Number:	06
Test Date:	January 28, 2004
Target Location:	Side Rail
Target Code:	SR2A
Horizontal Impact Angle:	90°
Vertical Impact Angle:	42°
Ambient Temperature:	22°C
Relative Humidity:	15
Time of Impact:	14:45
Headform Number:	0642

Impact Point Description (from lower midpoint on midsagittal line)				
On Centerline	5	x	mm right	mm left
On Centerline	7		mm up	



POST-IMPACT SR2A HEADFORM

Free Motion HIC	622.2
HIC(d)	635.8
Impact Velocity (kph)	23.62
HIC T1 (msec)	1.1
HIC T2 (msec)	7.9

# FMVSS 201U IMPACT TEST - 2004 Mazda 6 C45400 - SR2A

FMH Headform 0642

Location: SR2A

Test Date: January 28, 2004

Work File: SR2A

## TEST RESULTS

Lab Temperature: 22 C

HICd: 635.8

Lab Humidity: 15 %

HIC (36ms): 622.2

Velocity at Impact: 23.62 KPH

t1: 1.1 msec

t2: 7.9 msec

Free Flight Distance: 213.92 mm

Duration: 6.8 msec

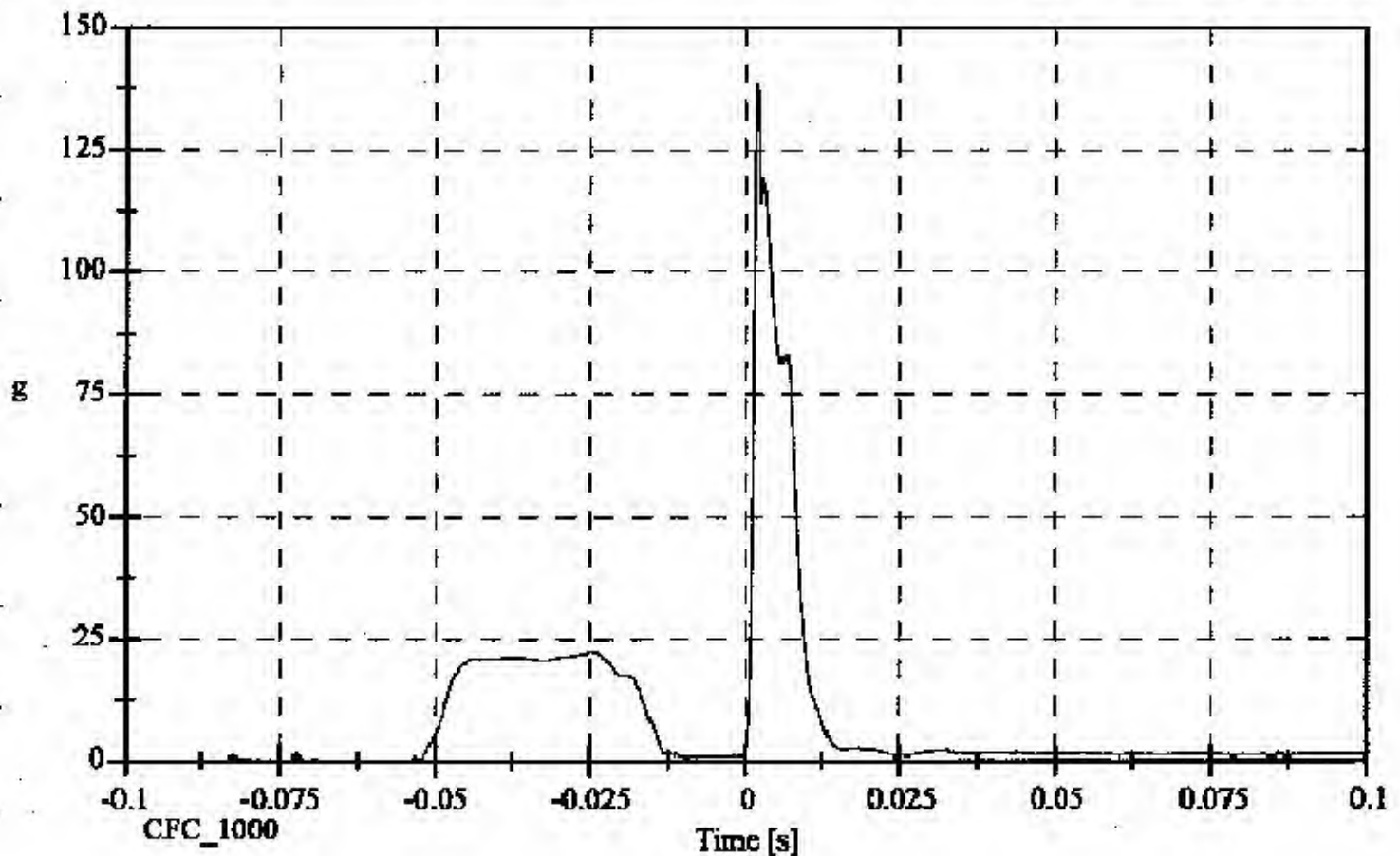
Average Acceleration: 8.1 g

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 138.5 [g] at 0.002 [s]

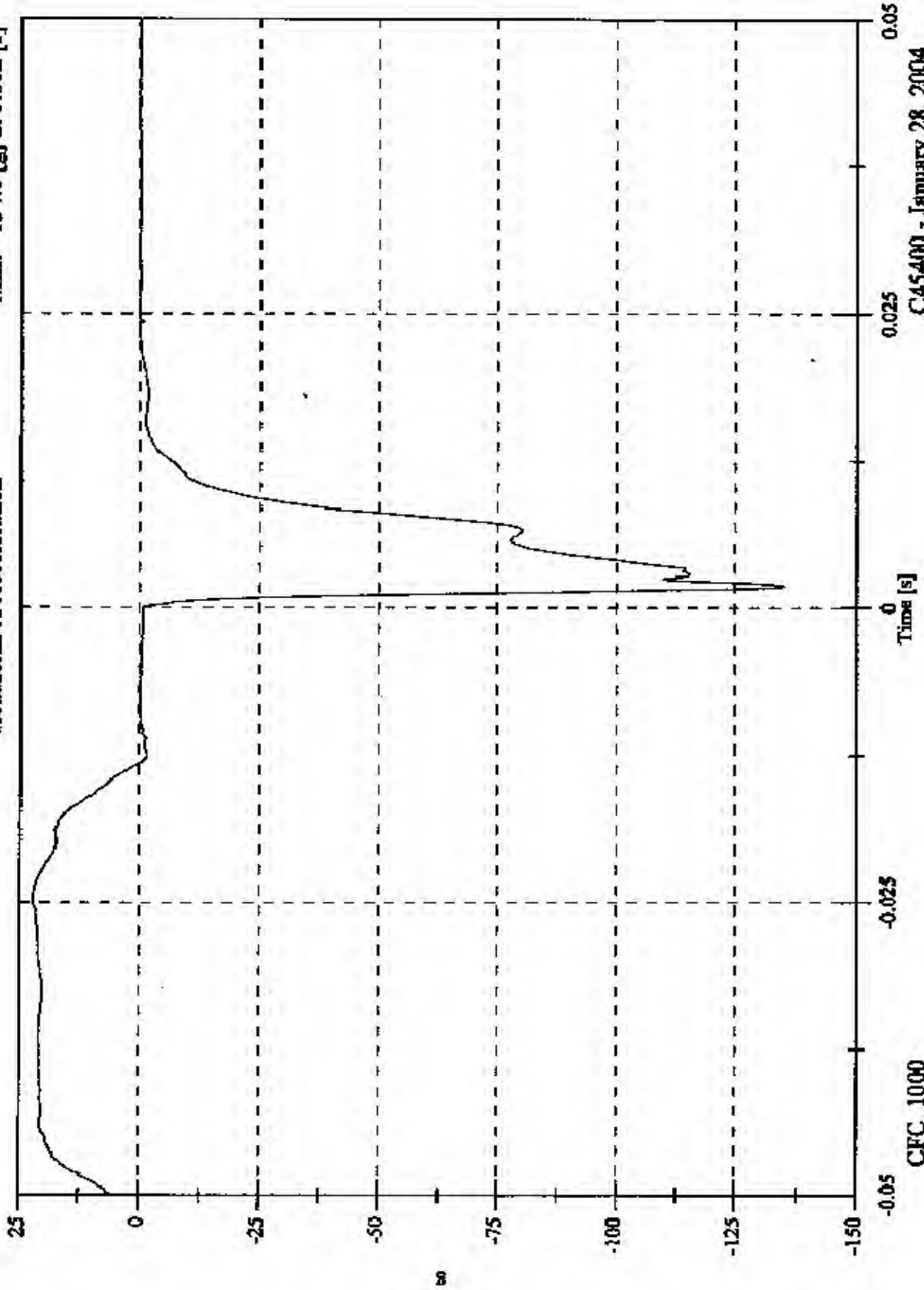
Min: 0.0 [g] at -0.095 [s]



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform X Acceleration

Max: 22.3 [g] at -0.025 [s]  
Min: -134.8 [g] at 0.002 [s]



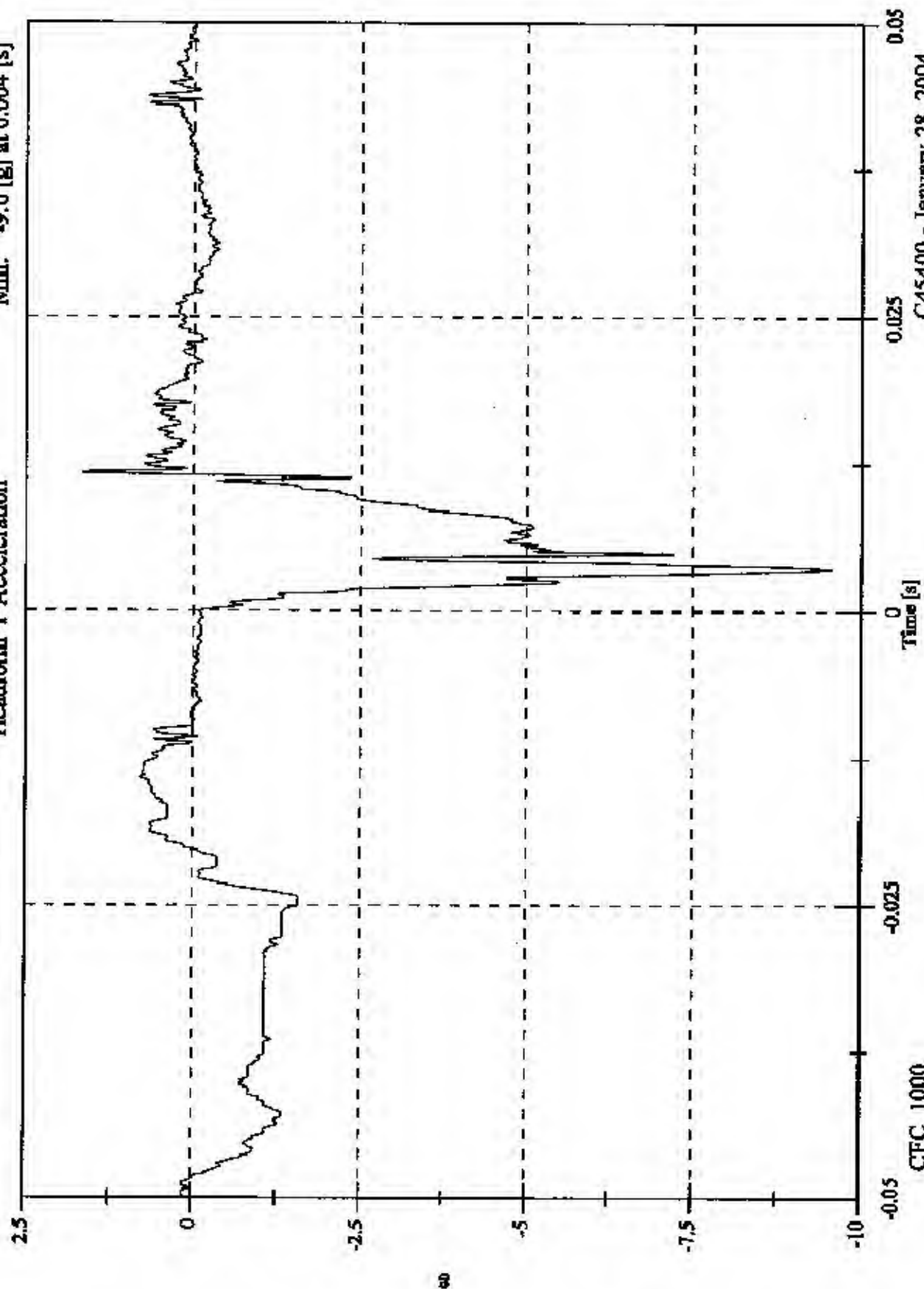
CFC\_1000

C45400 - January 28, 2004

# FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Y Acceleration

Max: 1.7 [g] at 0.012 [s]  
Min: -9.6 [g] at 0.004 [s]



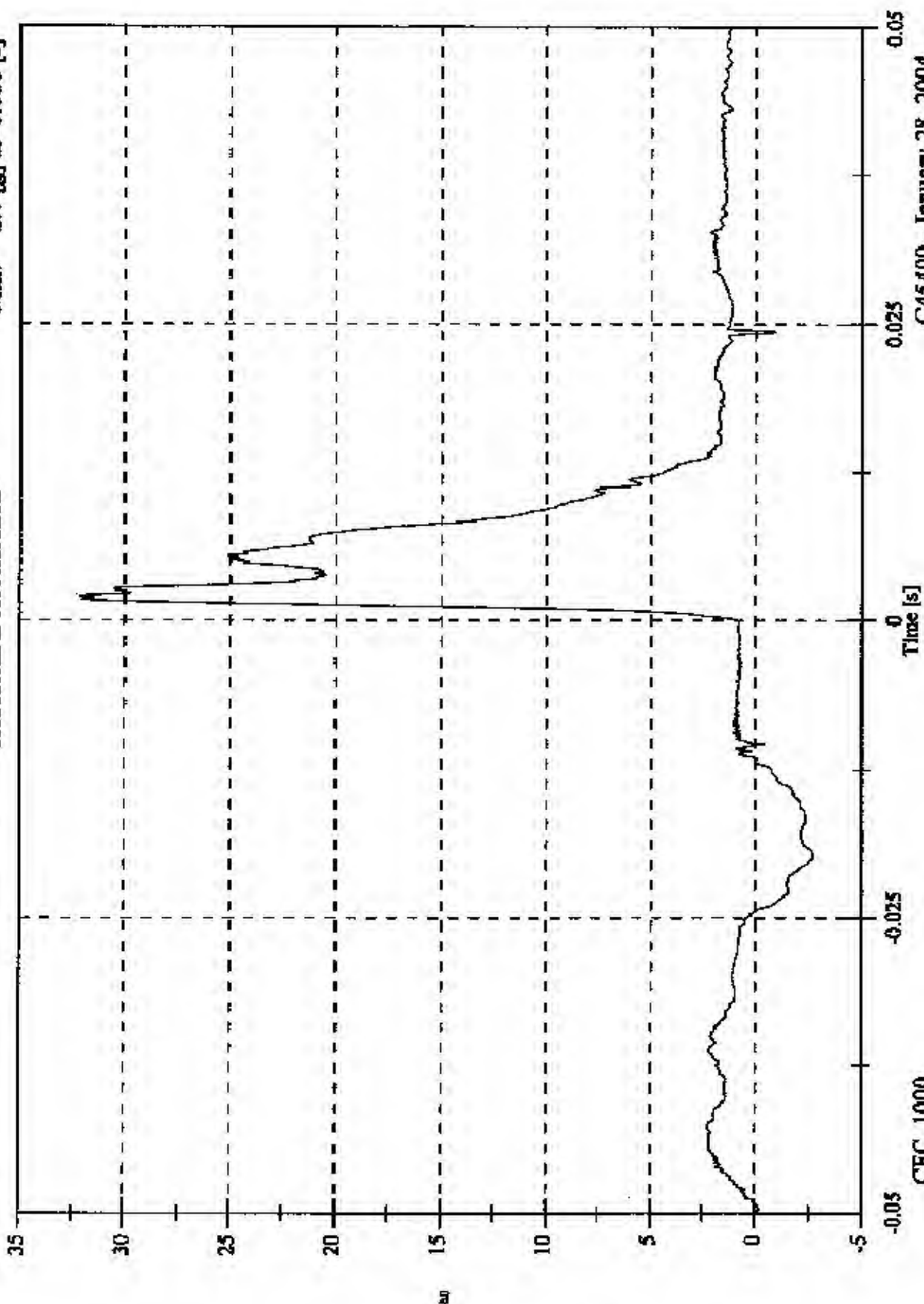
C45400 - January 28, 2004



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Z Acceleration

Max: 32.2 [g] at 0.002 [s]  
Min: -2.7 [g] at -0.020 [s]

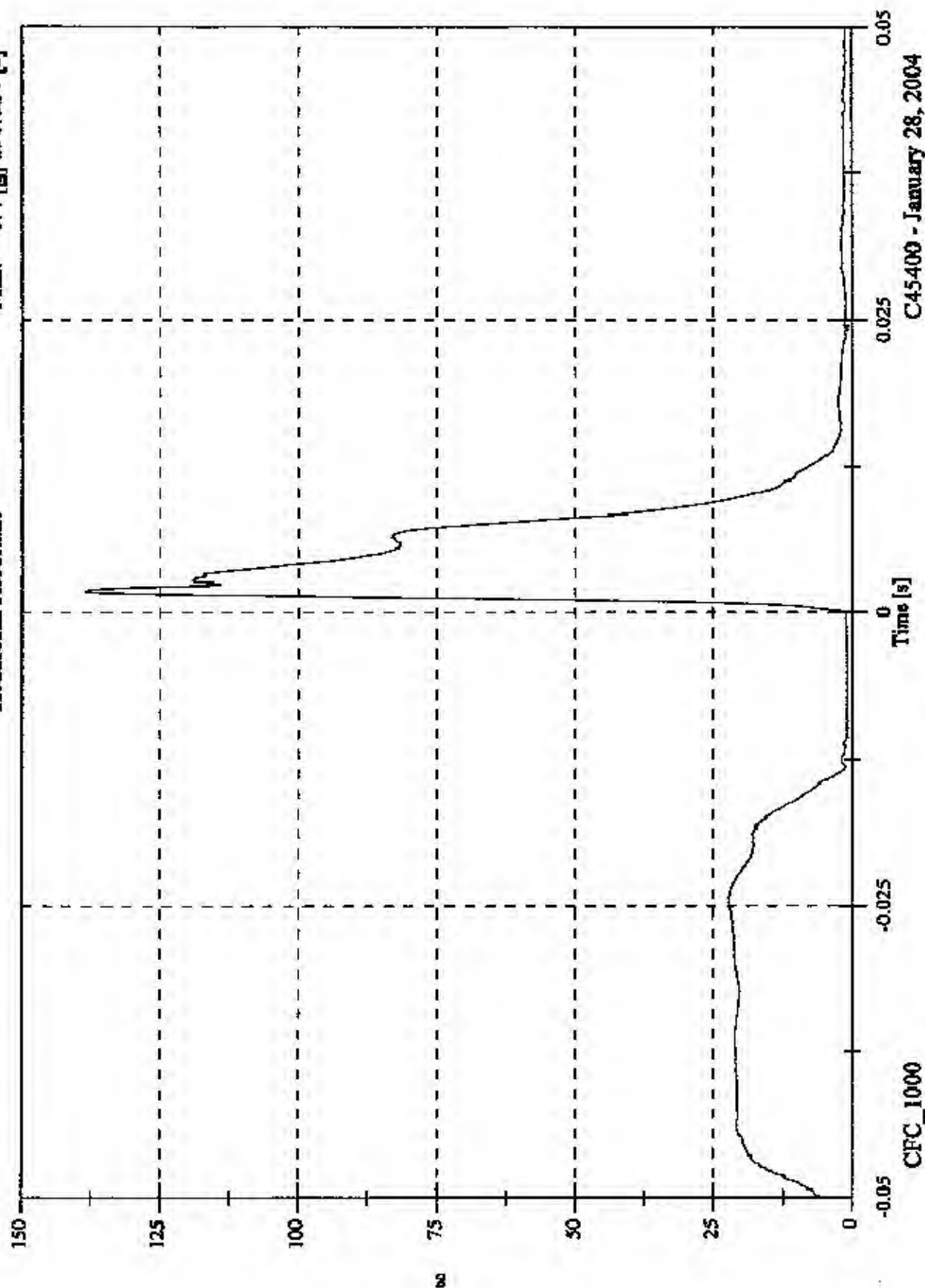


C45400 - January 28, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 138.5 [g] at 0.002 [s]  
Min: 0.4 [g] at 0.024 [s]

Headform Resultant

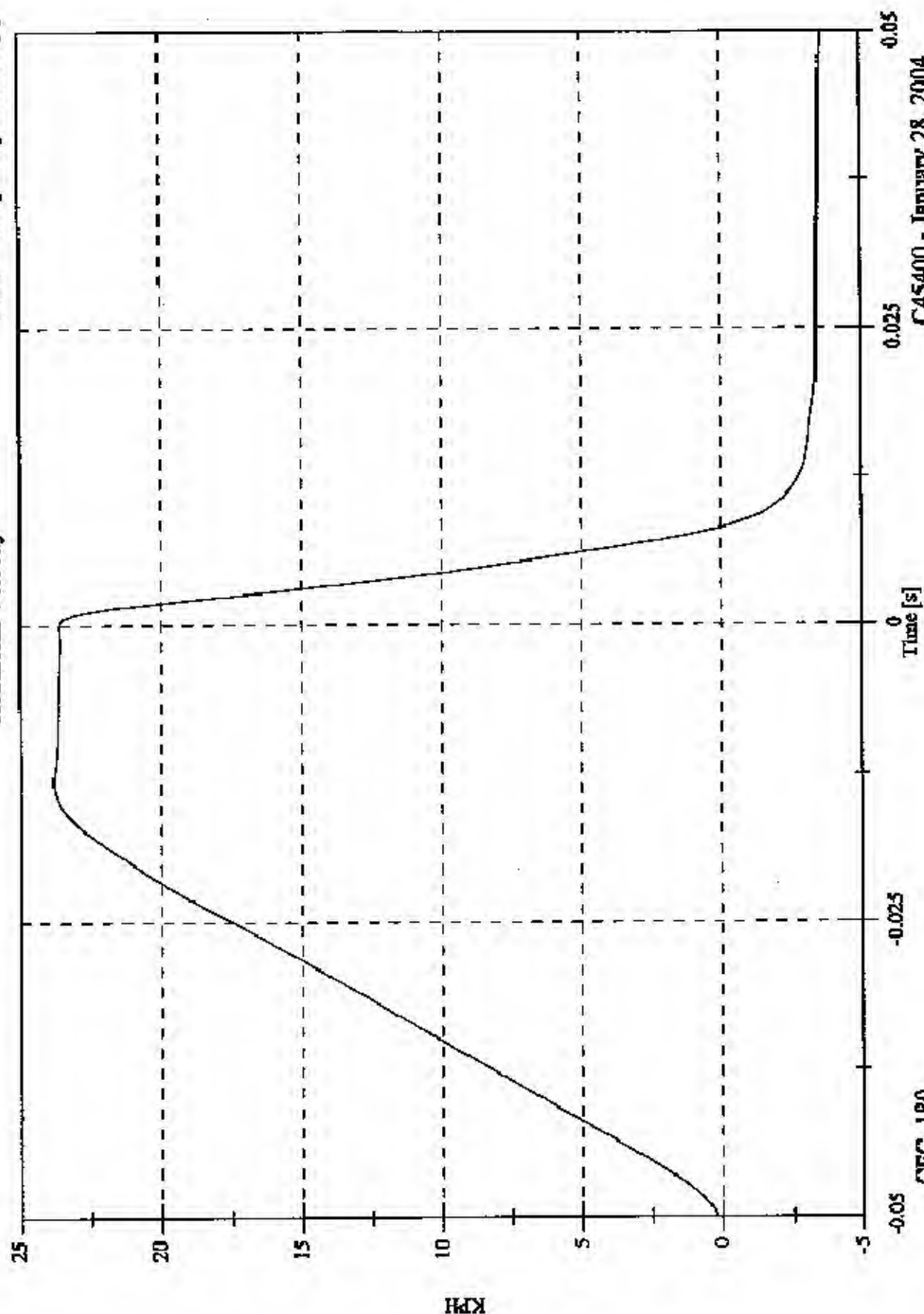


C45400 - January 28, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 23.8 [KPH] at -0.013 [s]  
Min: -3.6 [KPH] at 0.050 [s]

Headform Velocity



CFC\_180

-0.025

Time [s]

0.025

0.05

C45400 - January 28, 2004

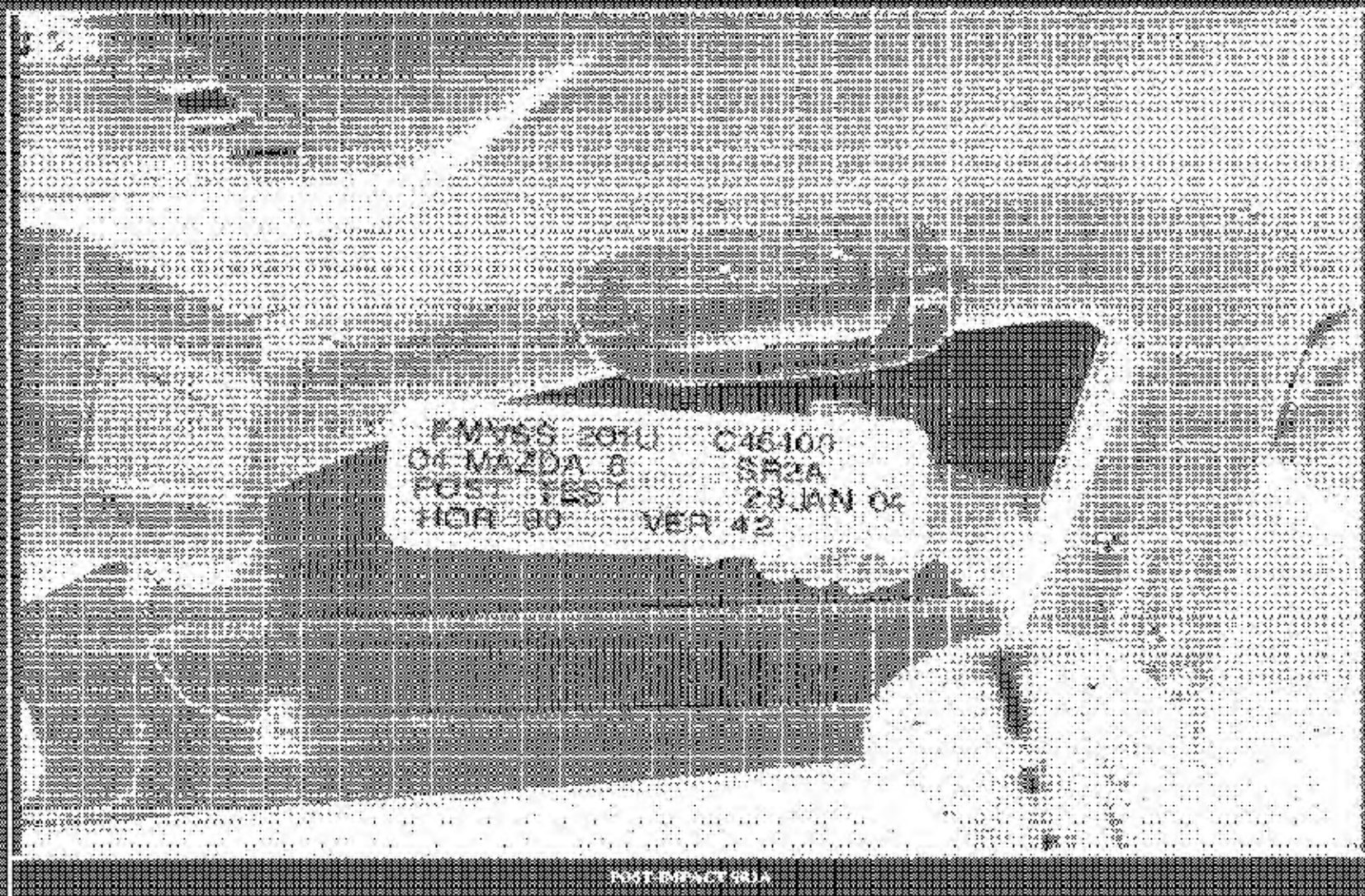


FMVSS 2010 C45400  
04 MAZDA 6 SRZA  
PRE TEST 28 JAN 04  
HOR 60 VER 42

PRE-IMPACT SRZA

3716-05





PMVSS 201U C46100  
06 MAZDA 8 SA2A  
POST TEST 23 JAN 04  
HOR 80 VER 42

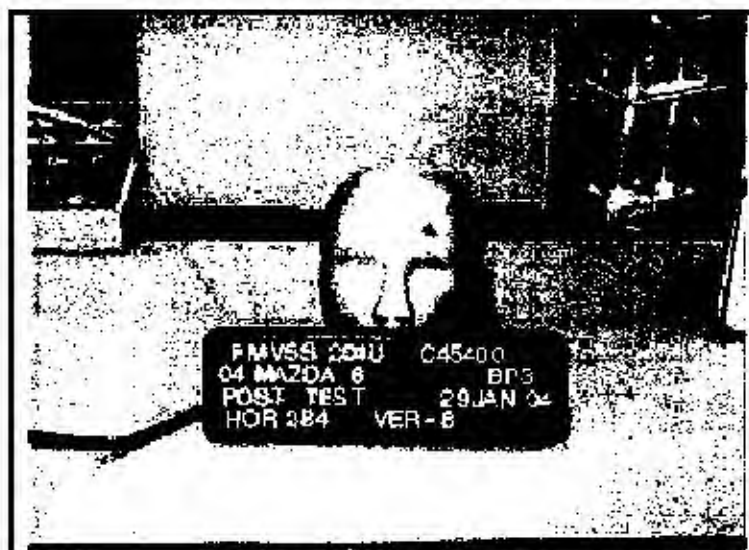
POST-BRACKET S&A

STW-05

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVFP80C345N22817
DATE OF MANUFACTURE:	09/03 (SEE CERTIFICATION LABEL)
COLOR:	Silver

Test Number:	07
Test Date:	January 29, 2004
Target Location:	B-Pillar
Target Code:	BP3
Horizontal Impact Angle:	284°
Vertical Impact Angle:	-8°
Ambient Temperature:	20°C
Relative Humidity:	16
Time of Impact:	10:00
Headform Number:	0642

Impact Point Description (from lower midpoint on midsagittal line)				
On Centerline	25	mm right	x	mm left
On Centerline	8	mm up		



POST-IMPACT BP3 HEADFORM

Free Motion HIC	839.4
HIC(d)	799.7
Impact Velocity (kph)	23.50
HIC T1 (msec)	4.4
HIC T2 (msec)	7.3



# FMVSS 201U IMPACT TEST - 2004 Mazda 6 C45400 - BP3

FMH Headform 0642

Location: BP3

Test Date: January 29, 2004

Work File: BP3

## TEST RESULTS

Lab Temperature: 20 C

HICd: 799.7

Lab Humidity: 16 %

HIC (36ms): 839.4

Velocity at Impact: 23.50 KPH

t1: 4.4 msec

t2: 7.3 msec

Free Flight Distance: 229.91 mm

Duration: 2.9 msec

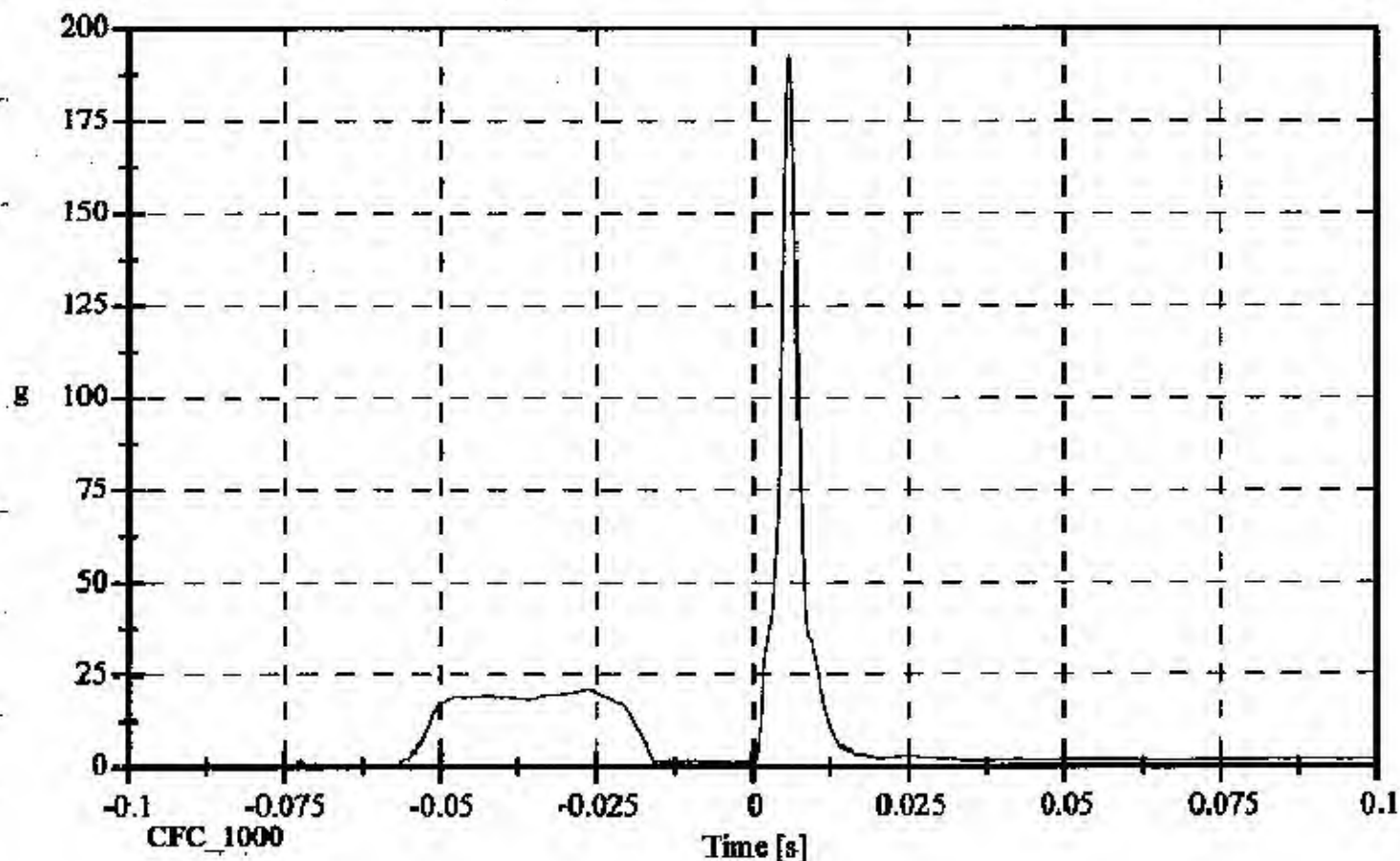
Average Acceleration: 8.1 g

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 192.9 [g] at 0.006 [s]

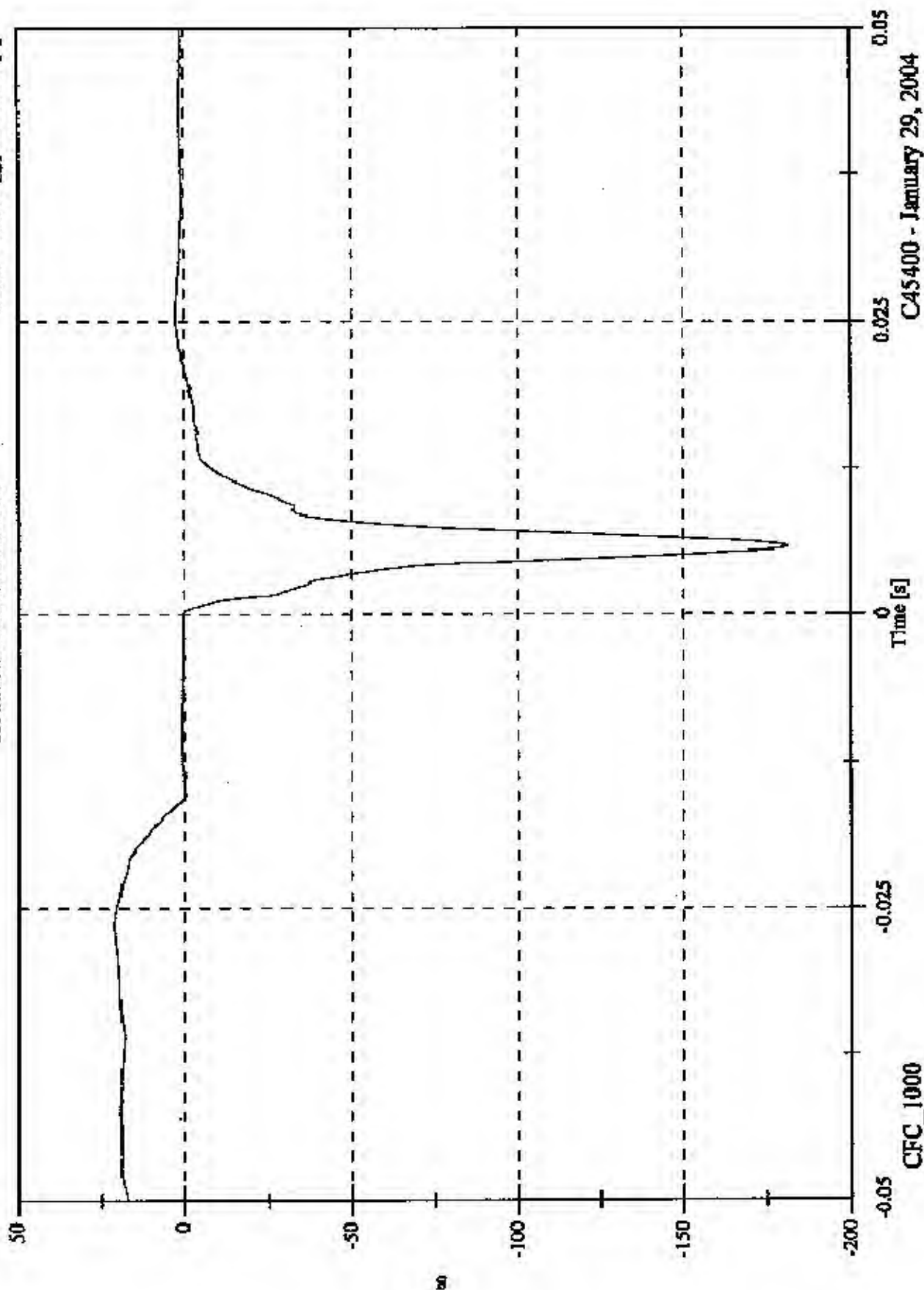
Min: 0.0 [g] at -0.076 [s]



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform X Acceleration

Max: 21.3 [g] at -0.026 [s]  
Min: -180.9 [g] at 0.006 [s]



C45400 - January 29, 2004

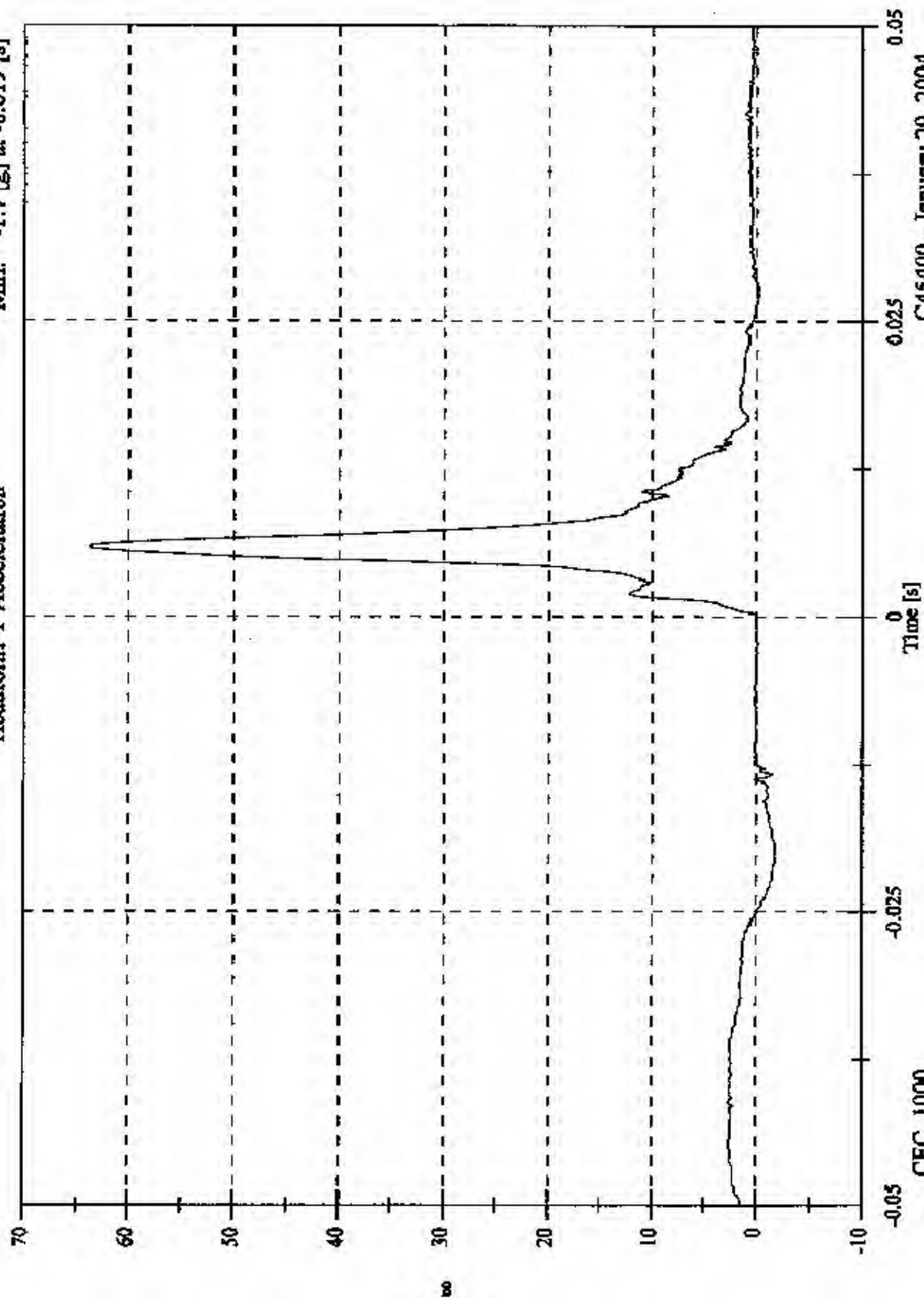
C45400 Driver Side BP3 Impact Plot #1



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Y Acceleration

Max: 63.7 [g] at 0.006 [s]  
Min: -1.7 [g] at -0.019 [s]

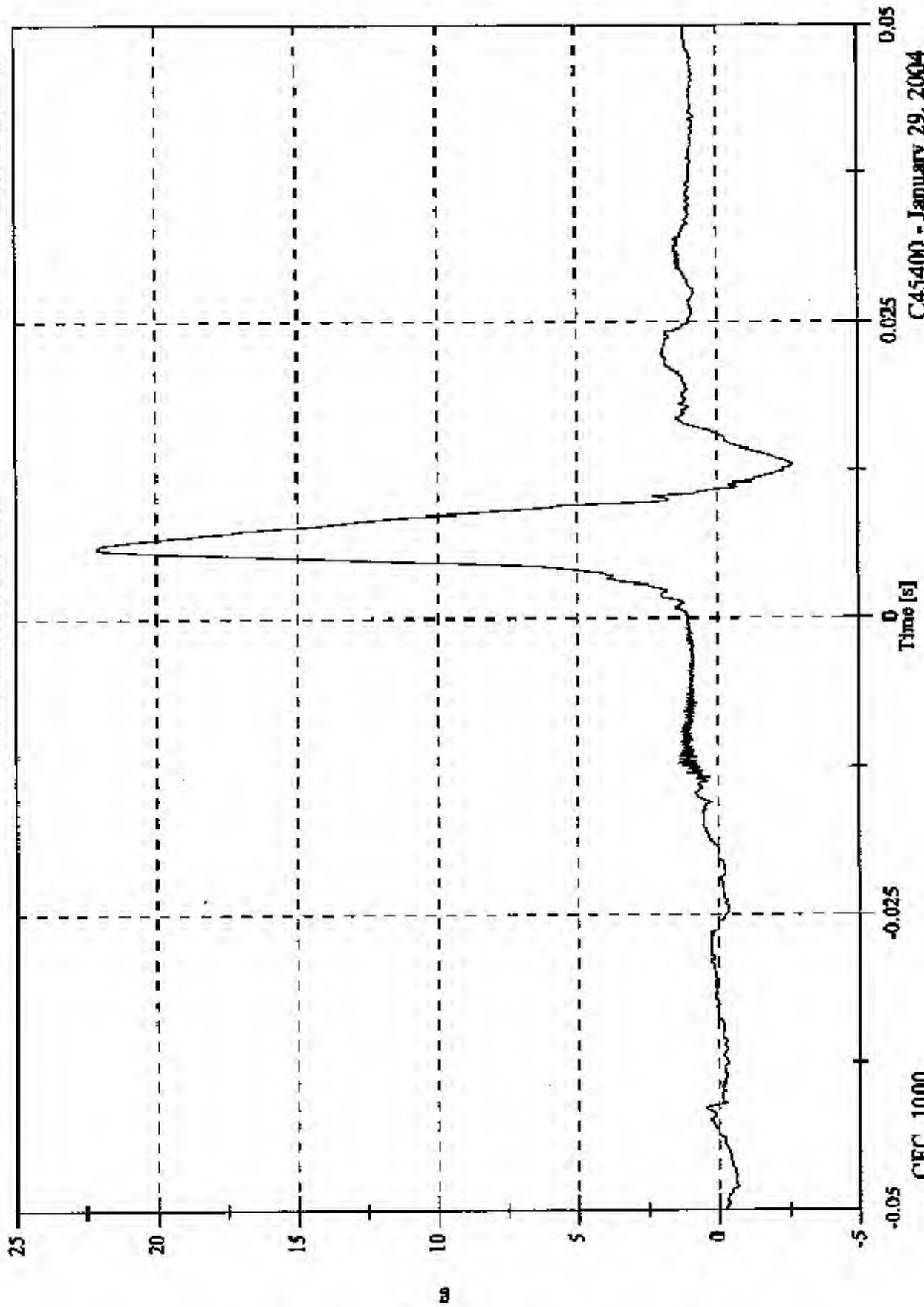


C45400 - January 29, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 22.1 [g] at 0.006 [s]  
Min: -2.7 [g] at 0.013 [s]

Headform Z Acceleration

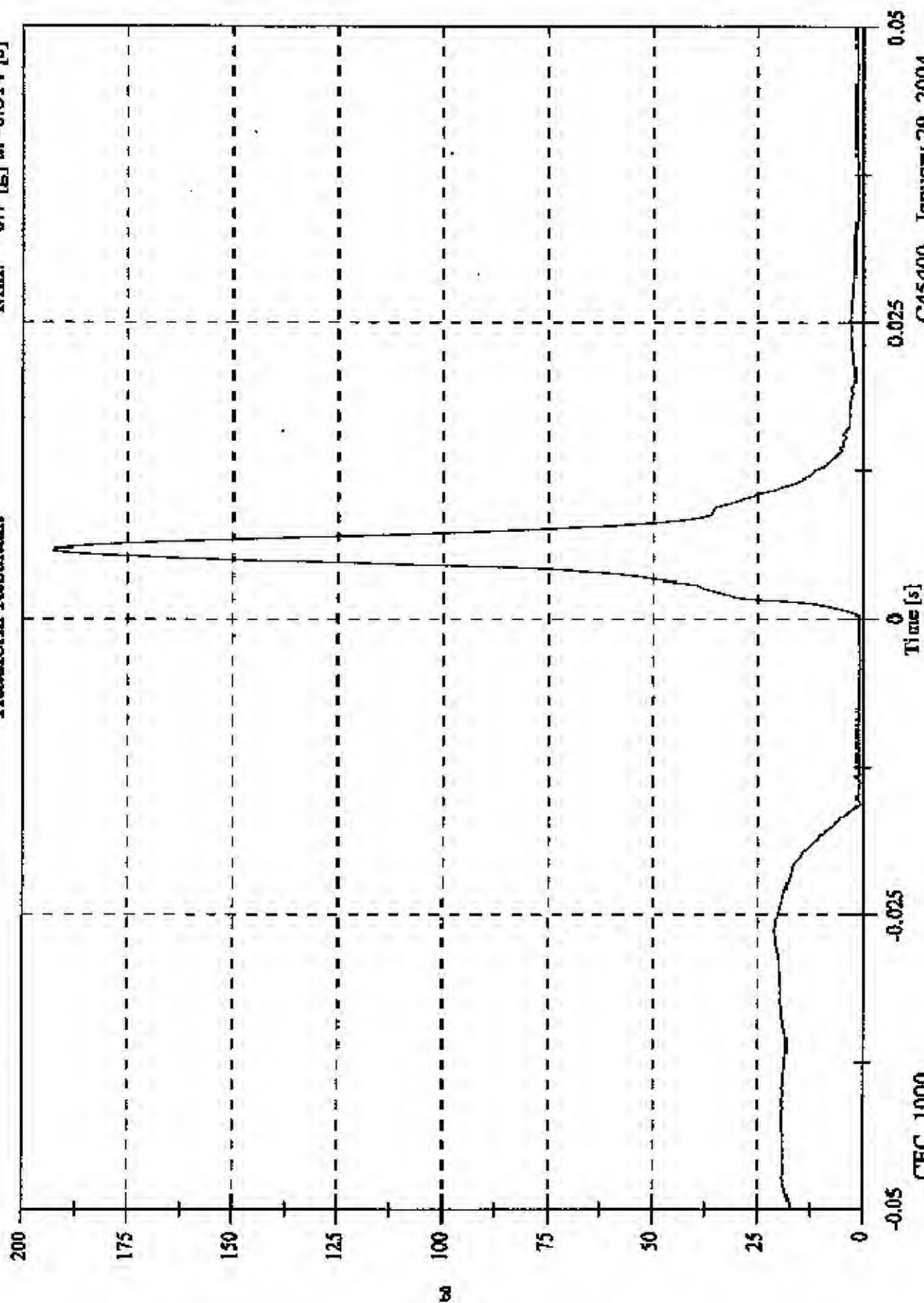


C45400 - January 29, 2004

# FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 192.9 [g] at 0.006 [s]  
 Min: 0.7 [g] at -0.014 [s]

Headform Resultant

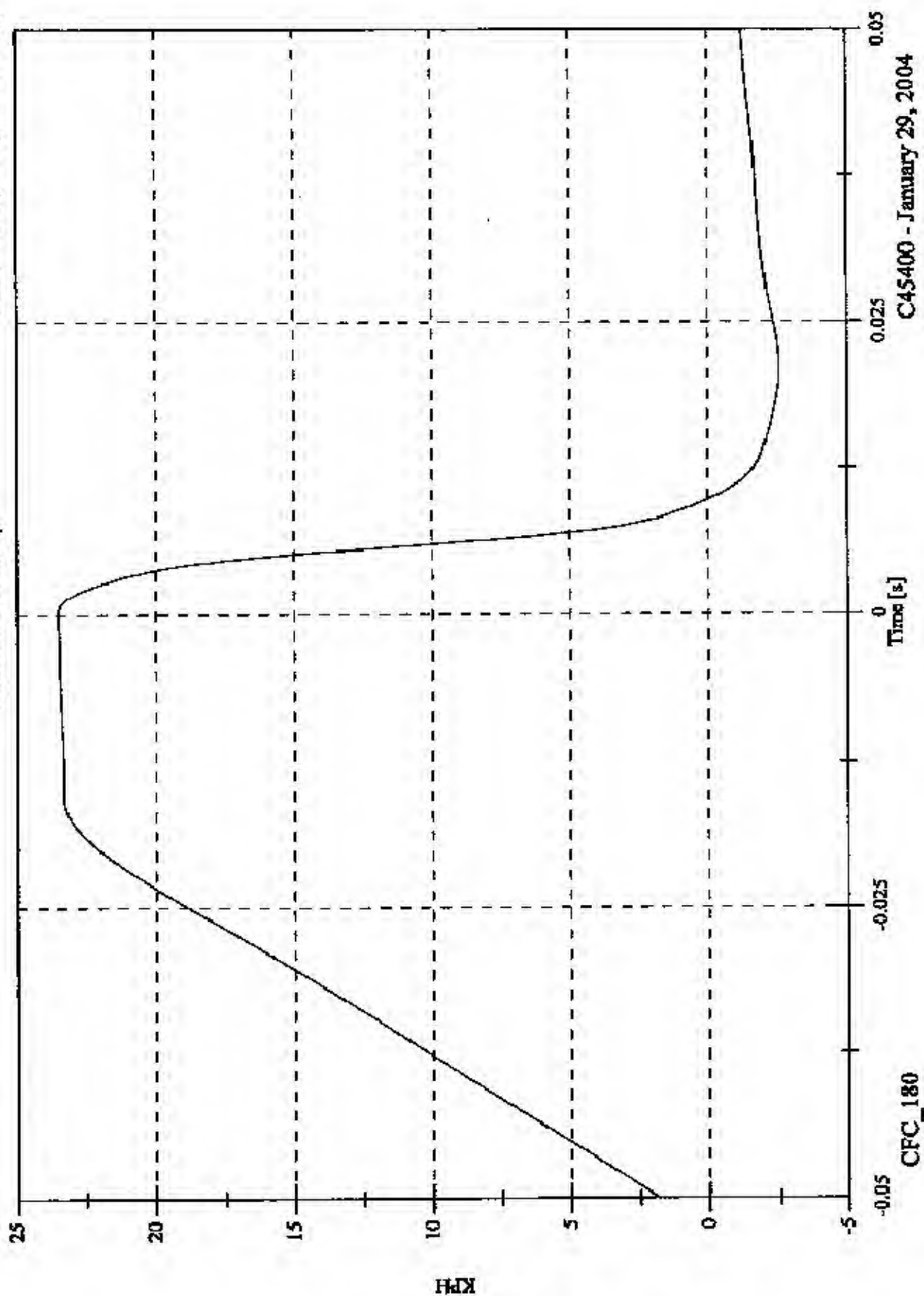


C45400 - January 29, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 23.5 [KPH] at 0.000 [s]  
Min: -2.5 [KPH] at 0.021 [s]

Headform Velocity



CFC\_180

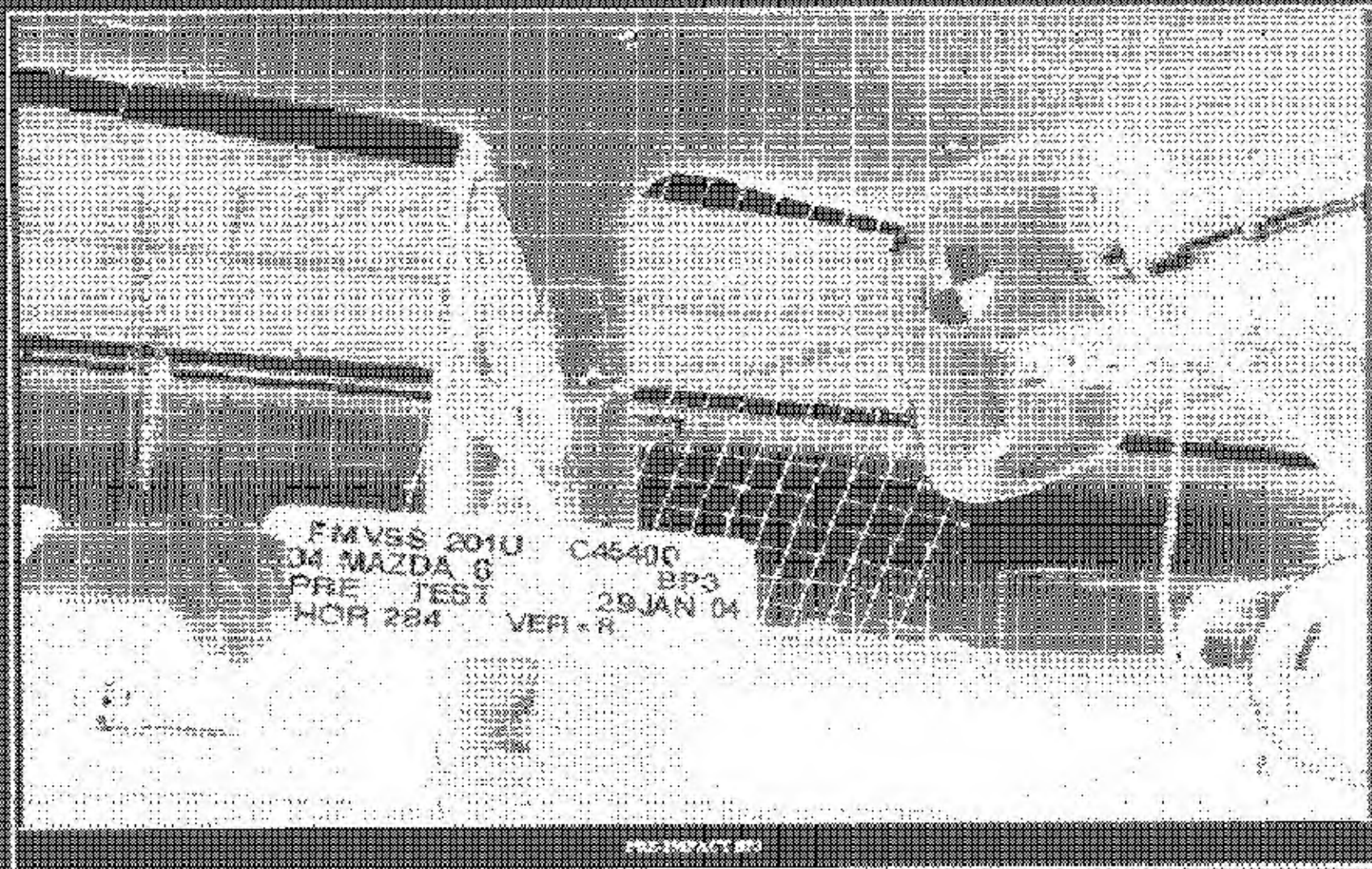
-0.025

Time [s]

0.025

C45400 - January 29, 2004





PRO-PRIVACY 800





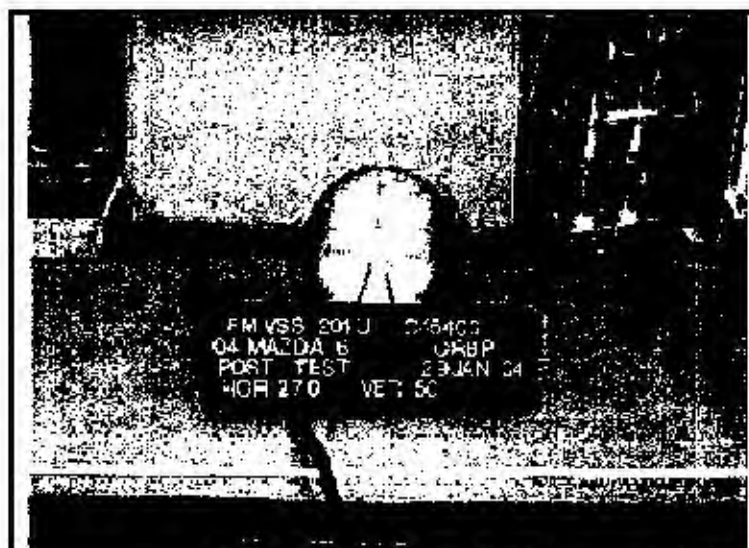
POST IMPACT 803

8706-05

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVFP80C345N22817
DATE OF MANUFACTURE:	09/03(SER CERTIFICATION LABEL)
COLOR:	Silver

Test Number:	08
Test Date:	January 29, 2004
Target Location:	Upper Roof
Target Code:	URBP
Horizontal Impact Angle:	270°
Vertical Impact Angle:	50°
Ambient Temperature:	20°C
Relative Humidity:	16
Time of Impact:	10:40
Headform Number:	1255

Impact Point Description (from lower midpoint on midsagittal line)				
On Centerline	5		mm right	x mm left
On Centerline	46		mm up	



POST-IMPACT UREP HEADFORM

Free Motion HIC	669.9
HIC(d)	671.6
Impact Velocity (kph)	23.50
HIC T1 (msec)	3.9
HIC T2 (msec)	11.1

# FMVSS 201U IMPACT TEST - 2004 Mazda 6 C45400 - URBP

FMH Headform 1255

Location: URBP

Test Date: January 29, 2004

Work File: URBP

## TEST RESULTS

Lab Temperature: 20 C

HICd: 671.6

Lab Humidity: 16 %

HIC (36ms): 669.6

Velocity at Impact: 23.50 KPH

t1: 3.9 msec

t2: 11.1 msec

Free Flight Distance: 222.88 mm

Duration: 7.2 msec

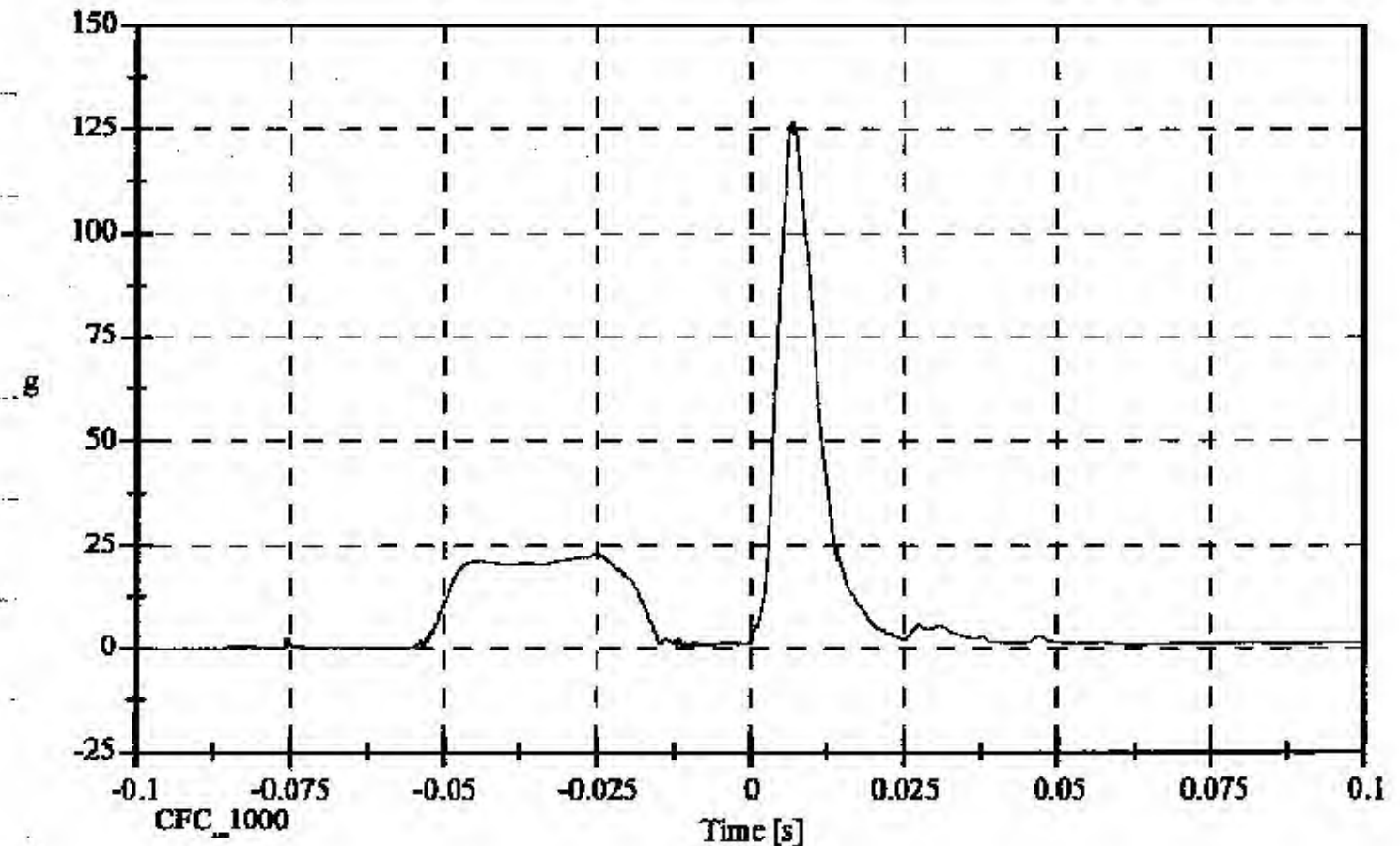
Average Acceleration: 9.1 g

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 126.7 [g] at 0.007 [s]

Min: -0.0 [g] at -0.099 [s]

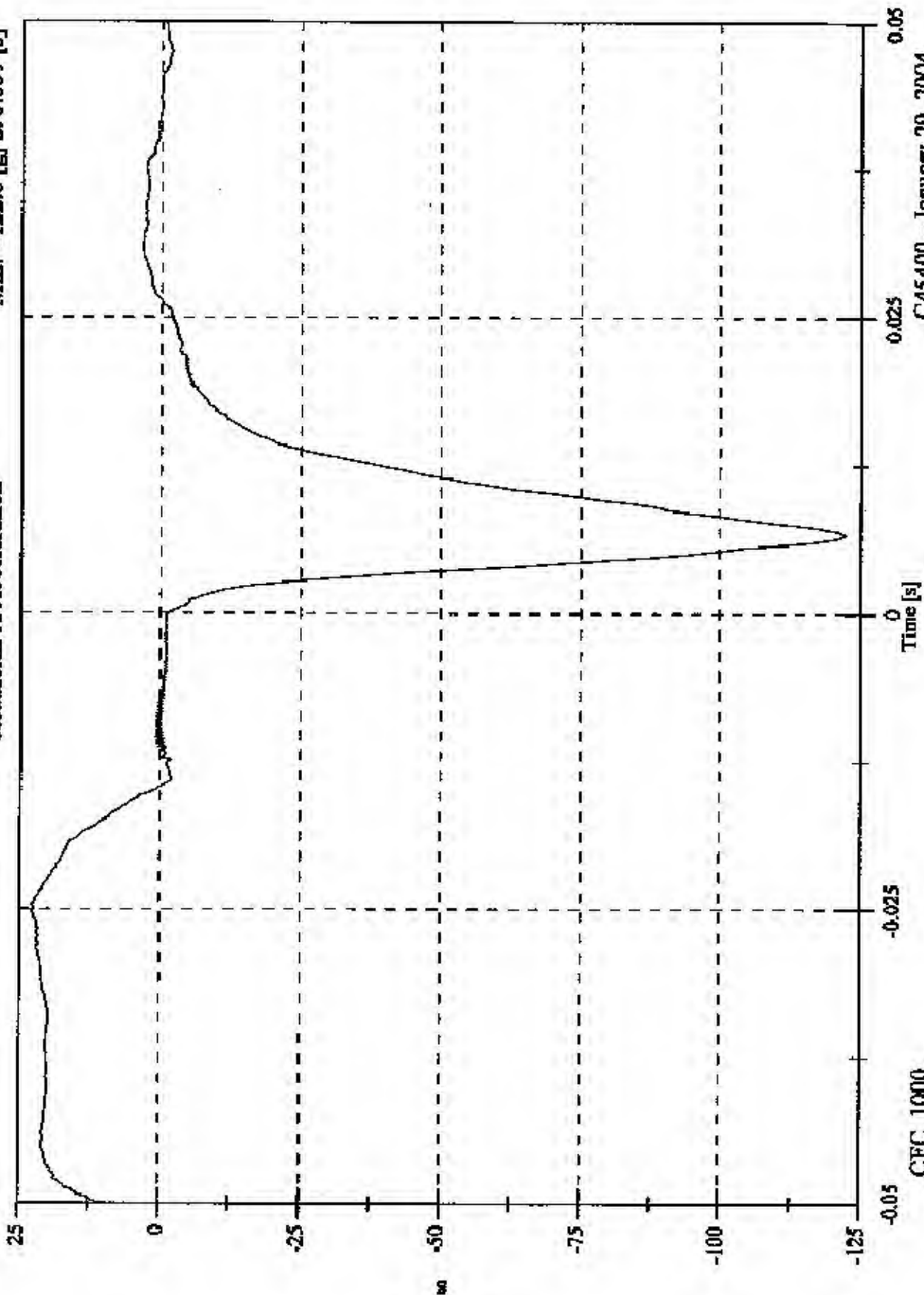




FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 22.9 [g] at -0.025 [s]  
Min: -122.6 [g] at 0.007 [s]

Headform X Acceleration

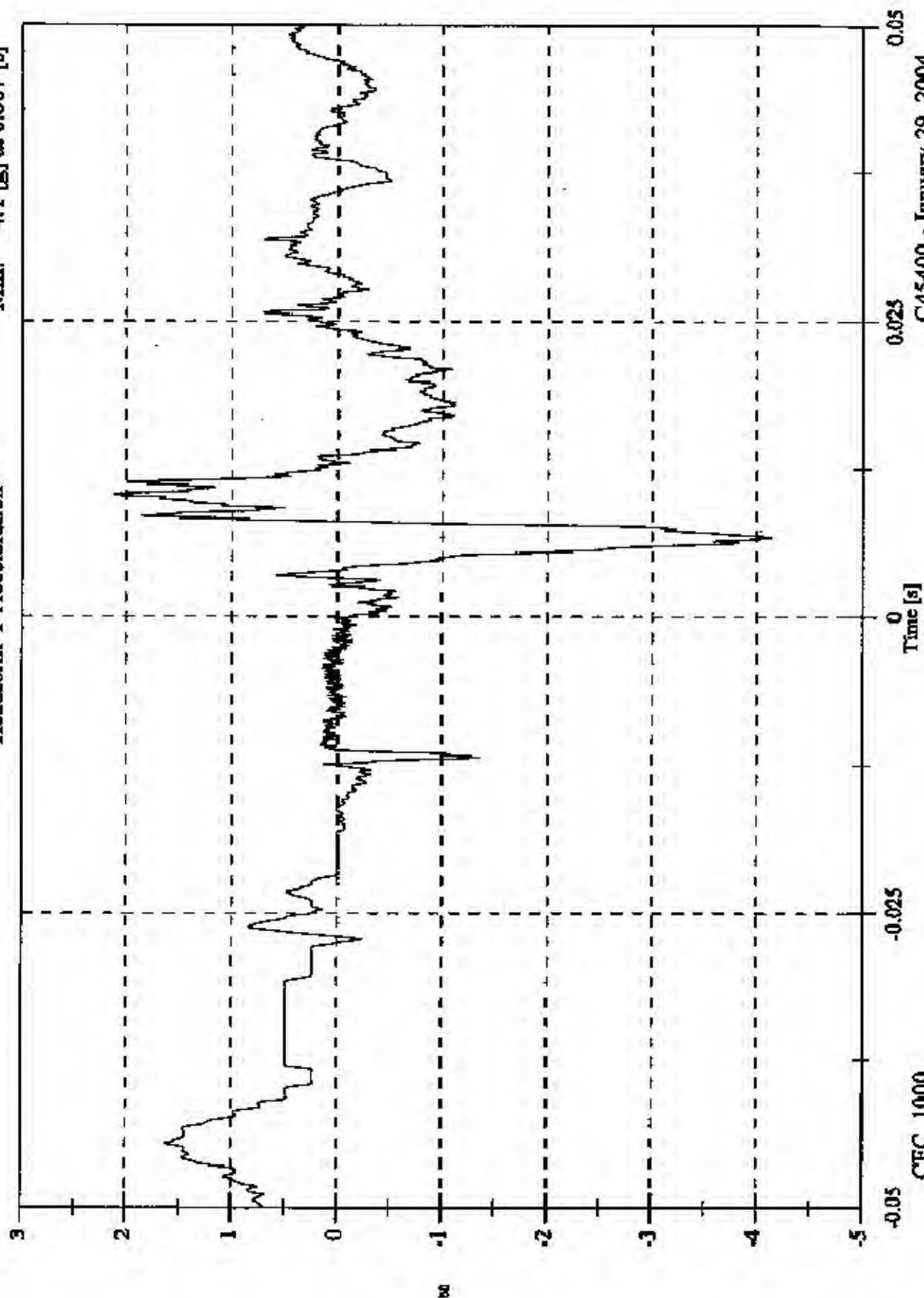


C45400 - January 29, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda4 6

Max: 2.1 [g] at 0.010 [s]  
Min: -4.1 [g] at 0.007 [s]

Headform Y Acceleration



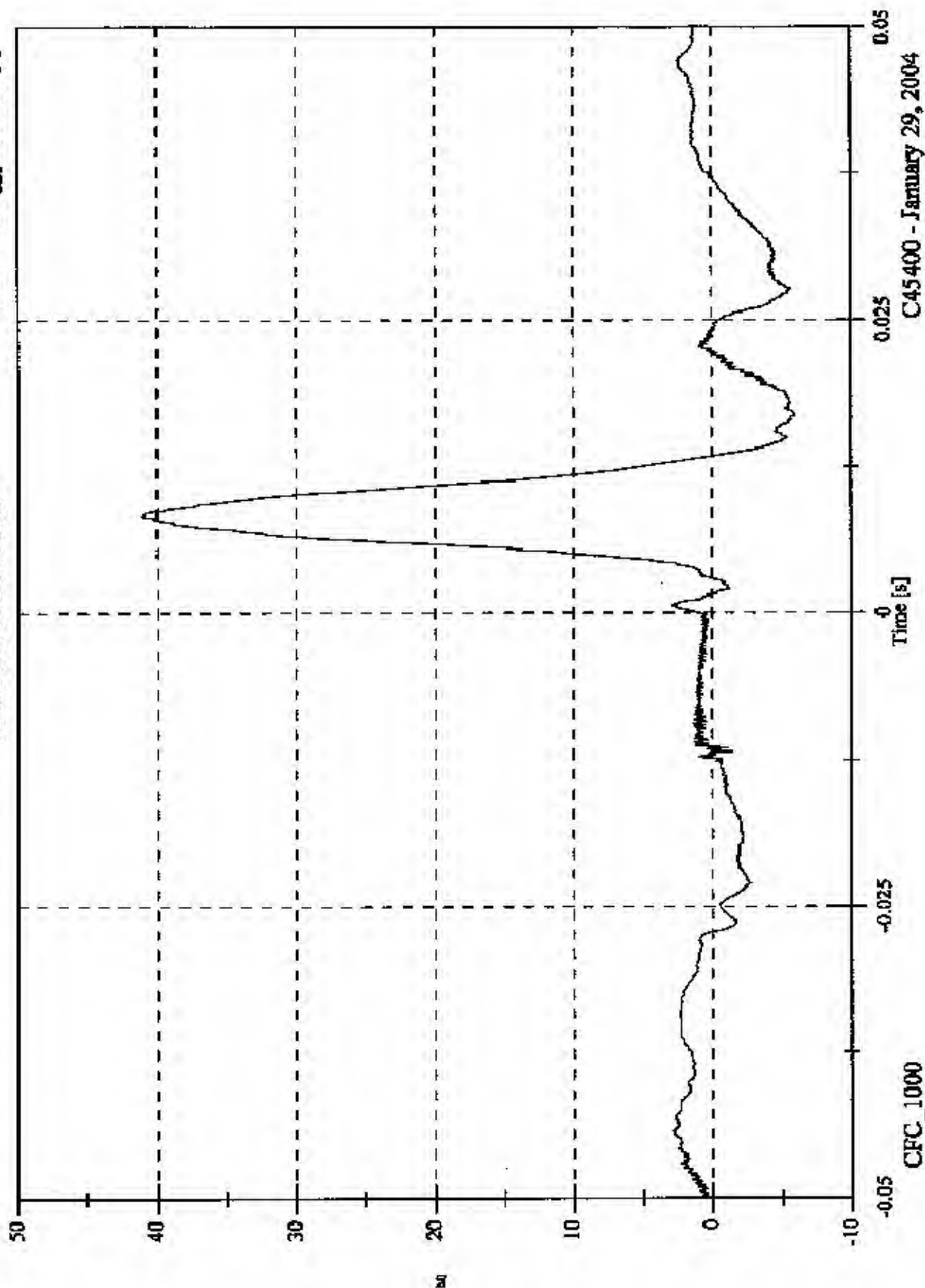
C45400 - January 29, 2004

C45400 Driver Side URB Impact Plot #2

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 41.1 [g] at 0.008 [s]  
Min: -6.0 [g] at 0.017 [s]

Headform Z Acceleration



CPC\_1000

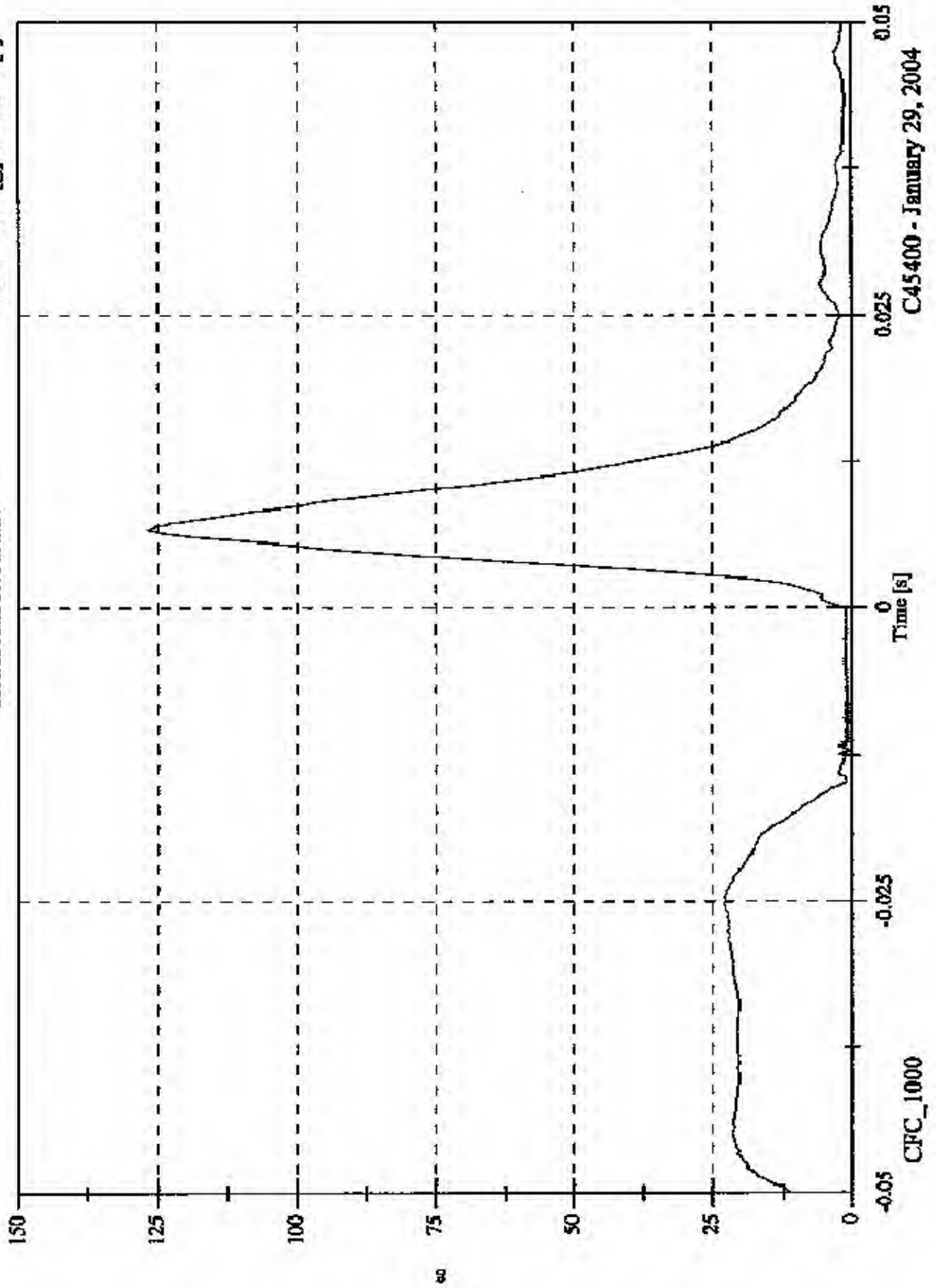
Time [s]

C45400 - January 29, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 126.7 [g] at 0.007 [s]  
Min: 0.4 [g] at -0.011 [s]



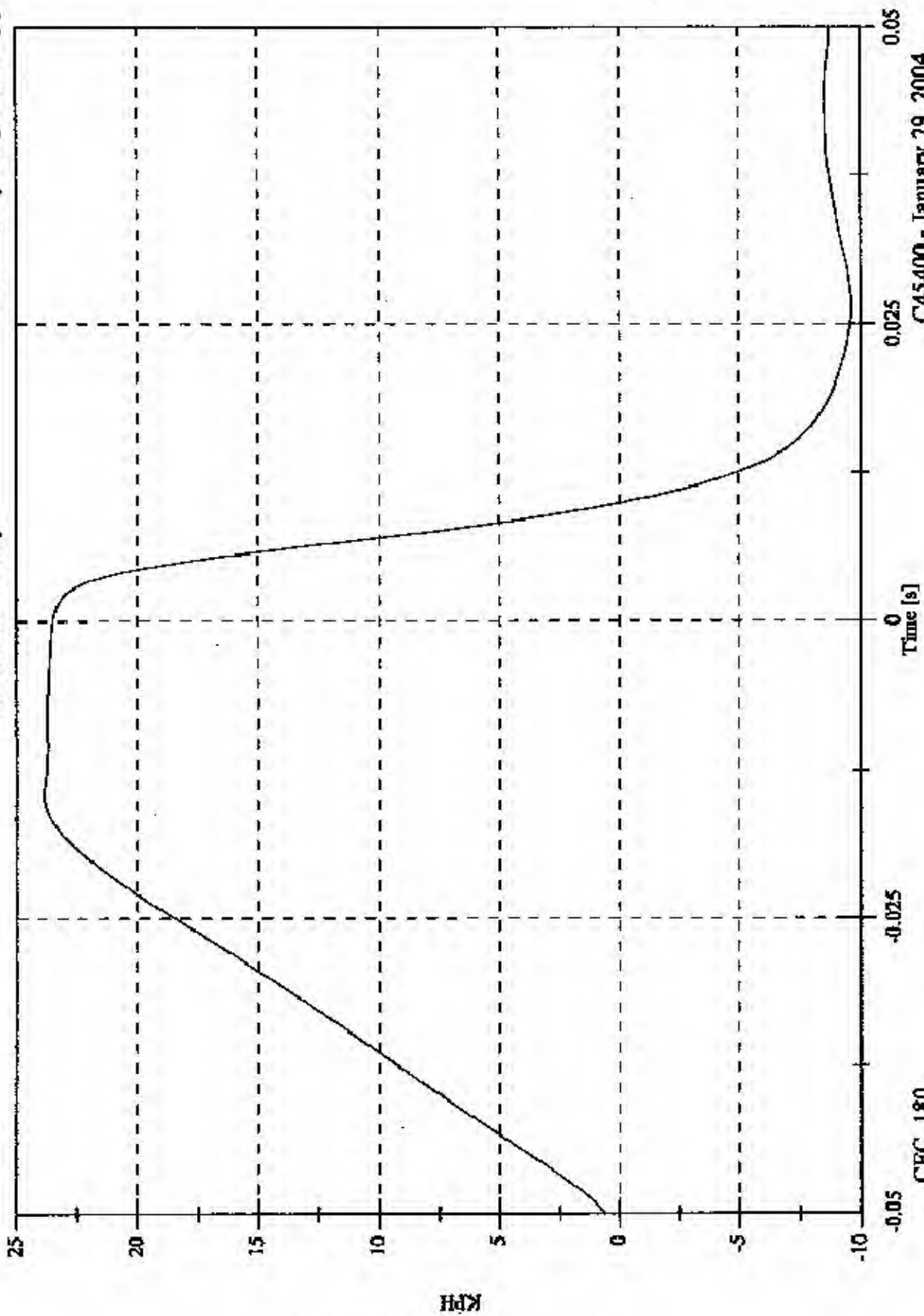
C45400 Driver Side URB Impact Plot #4



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 23.8 [KPH] at -0.015 [s]  
Min: -9.7 [KPH] at 0.026 [s]

Headform Velocity



CFC\_180

Time [s]

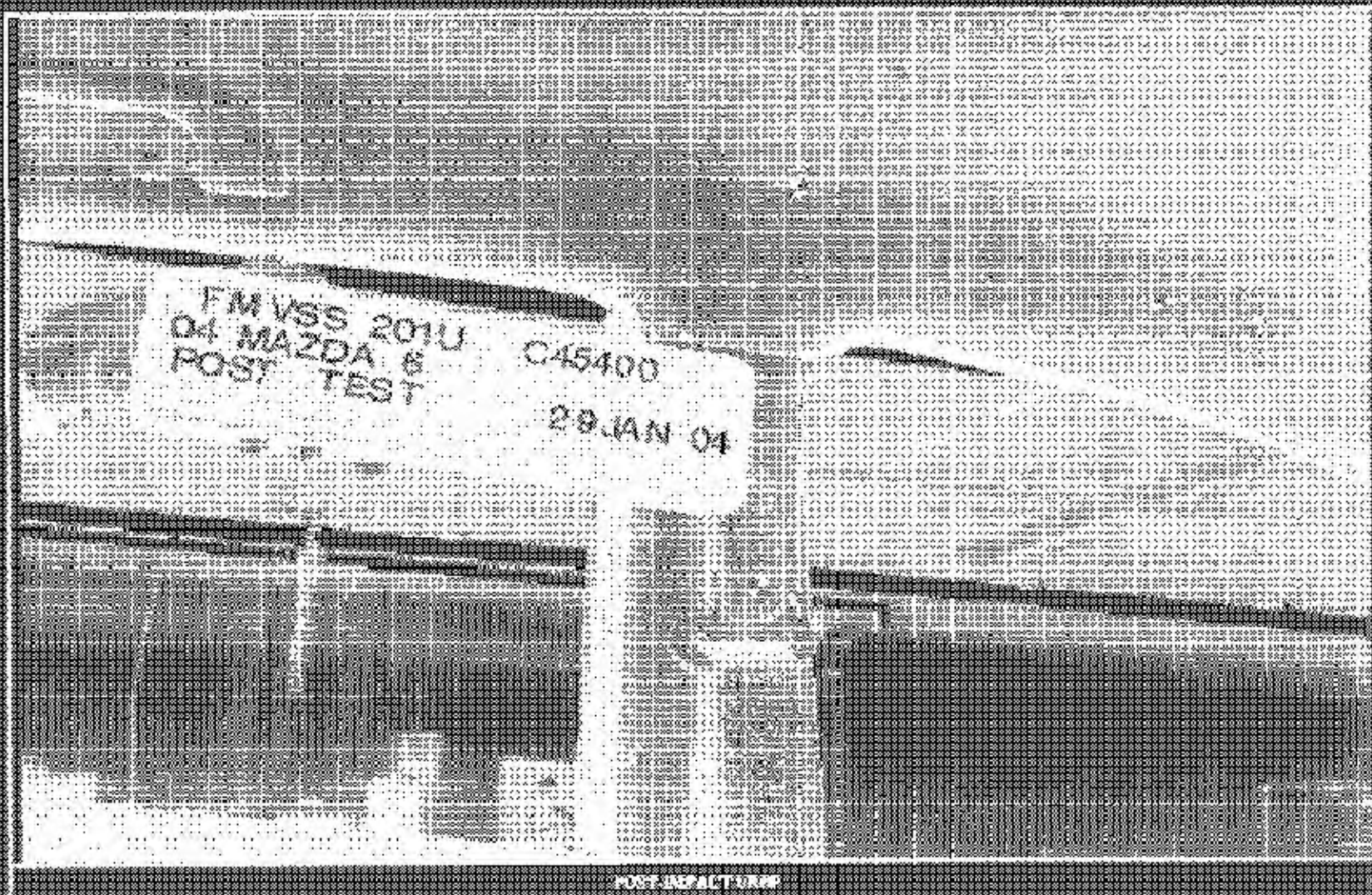
C45400 - January 29, 2004

FMV98 2010 C45400  
04 MAZDA 6 LIRBP  
PRE TEST 20 JAN 04  
HOR 270 VER 80

PAC-IMPACT LAB

8/10/03





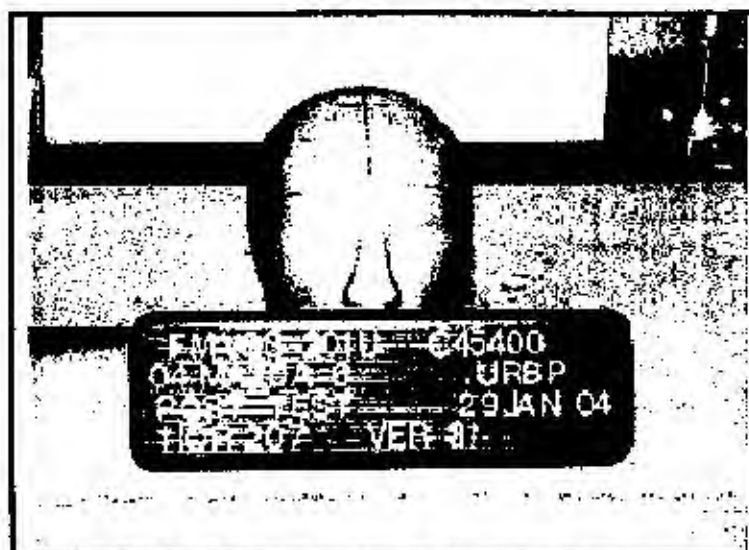
POST IMPACT VIEW

871045

VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVFP80C345N22817
DATE OF MANUFACTURE:	09/03(SEE CERTIFICATION LABEL)
COLOR:	Silver

Test Number:	09
Test Date:	January 29, 2004
Target Location:	A-Pillar
Target Code:	AP2
Horizontal Impact Angle:	207°
Vertical Impact Angle:	31°
Ambient Temperature:	20°C
Relative Humidity:	16
Time of Impact:	11:30
Headform Number:	0062

Impact Point Description (from lower midpoint on midsagittal line)				
On Centerline	4	x	mm right	mm left
On Centerline	40		mm up	



POST-IMPACT AP2 HEADFORM (Placard misaligned)

Free Motion HIC	315.1
HIC(d)	404.1
Impact Velocity (kph)	23.47
HIC T1 (msec)	1.6
HIC T2 (msec)	9.1



# FMVSS 201U IMPACT TEST - 2004 Mazda 6 C45400 - AP2

FMH Headform 0062

Location: AP2

Test Date: January 29, 2004

Work File: AP2

## TEST RESULTS

Lab Temperature: 20 C

HICd: 404.1

Lab Humidity: 16 %

HIC (36ms): 315.1

Velocity at Impact: 23.47 KPH

t1: 1.6 msec

t2: 9.1 msec

Free Flight Distance: 221.01 mm

Duration: 7.5 msec

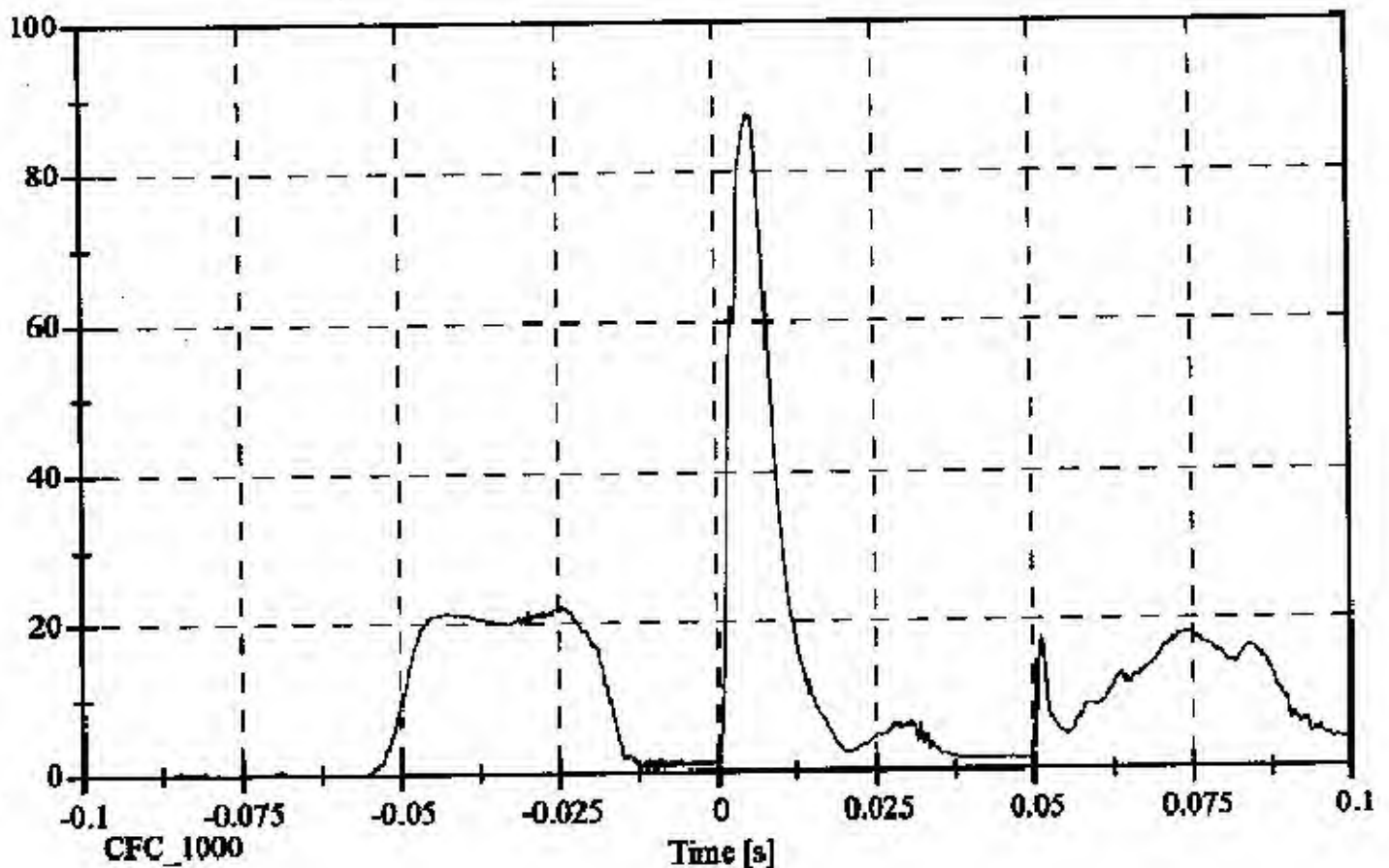
Average Acceleration: 10.3 g

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 87.7 [g] at 0.005 [s]

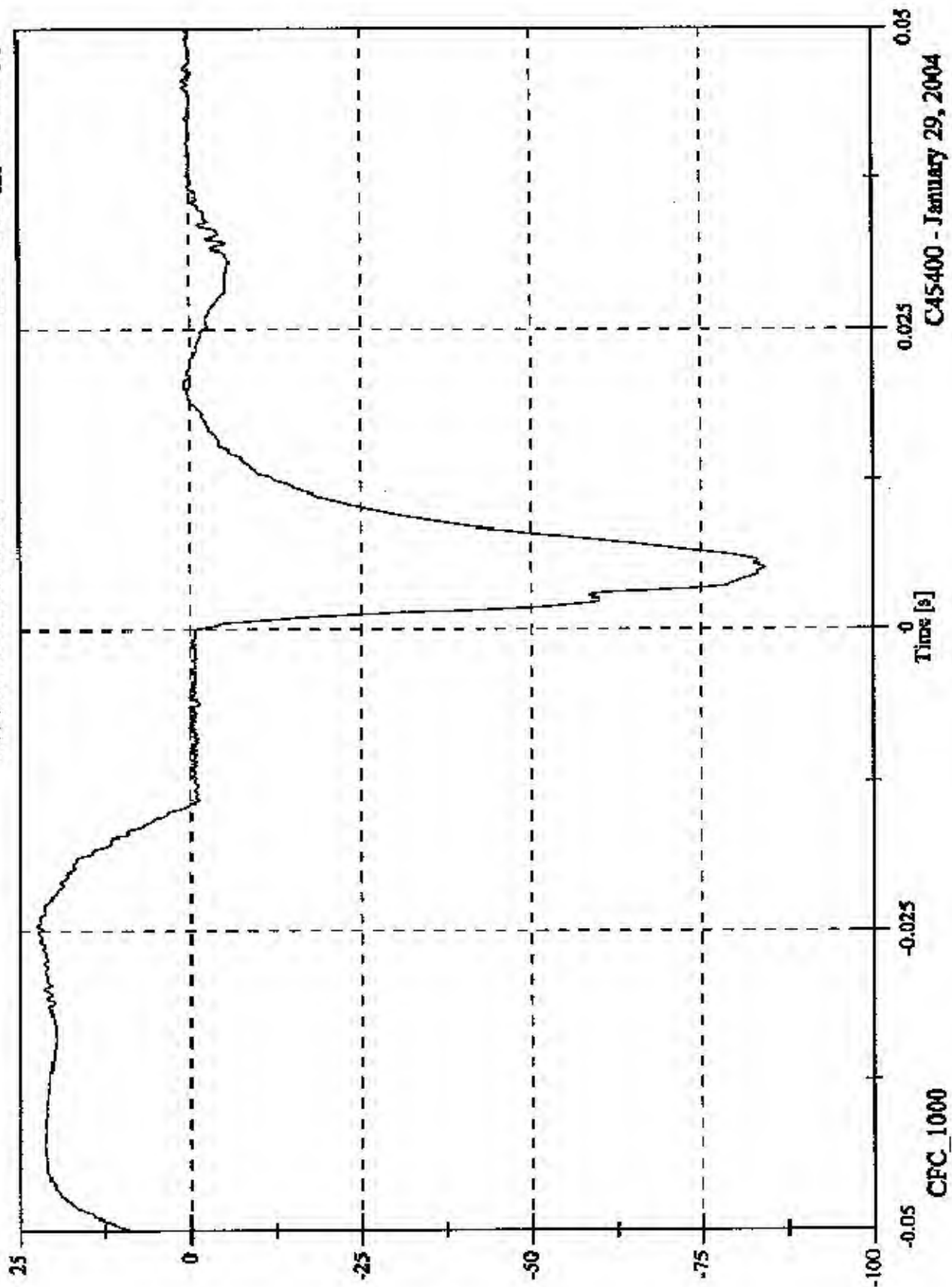
Min: 0.0 [g] at -0.058 [s]



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 22.5 [g] at -0.025 [s]  
Min: -84.2 [g] at 0.005 [s]

Headform X Acceleration

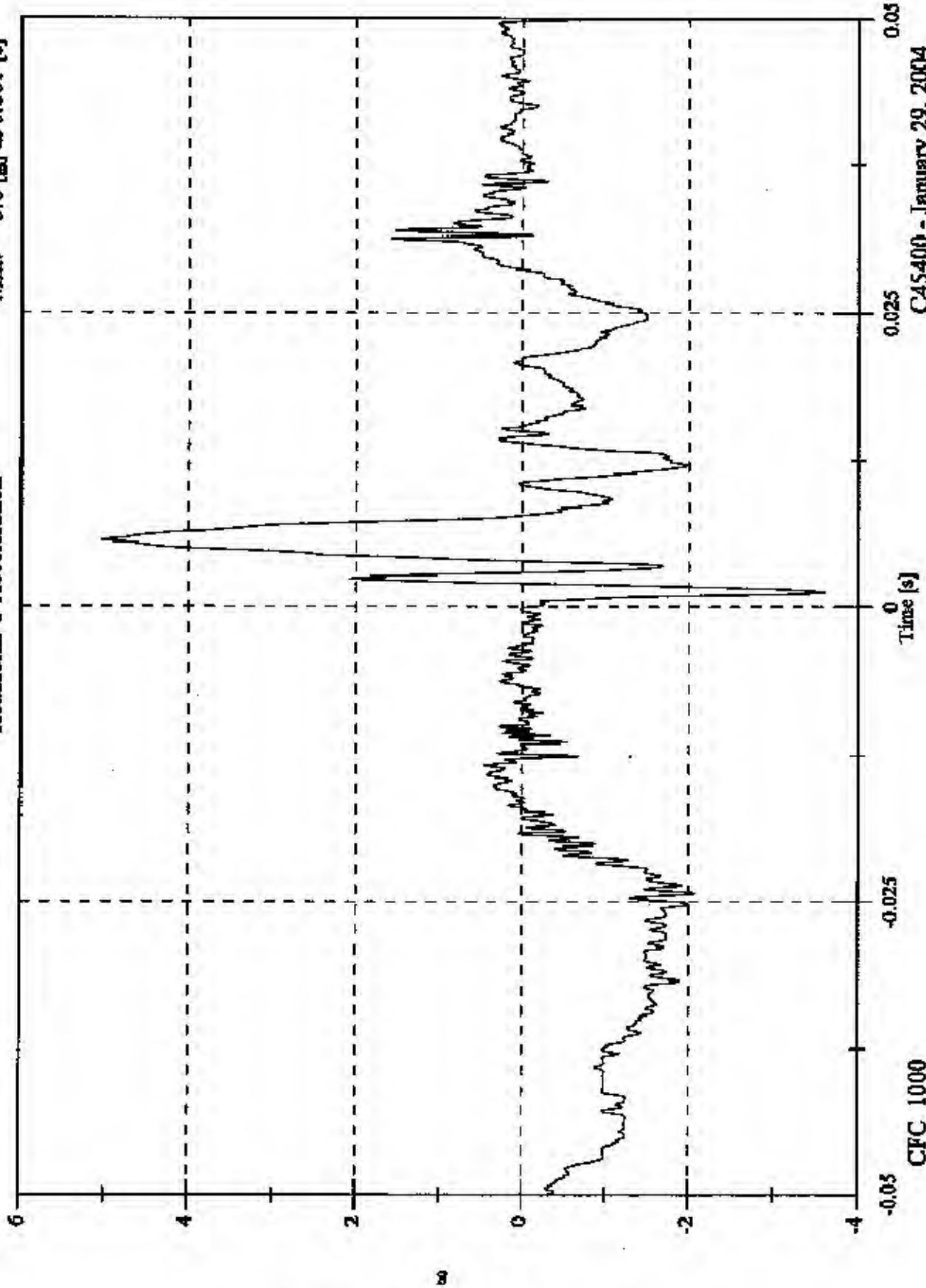


C45400 - January 29, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Y Acceleration

Max: 5.0 [g] at 0.006 [s]  
Min: -3.6 [g] at 0.001 [s]

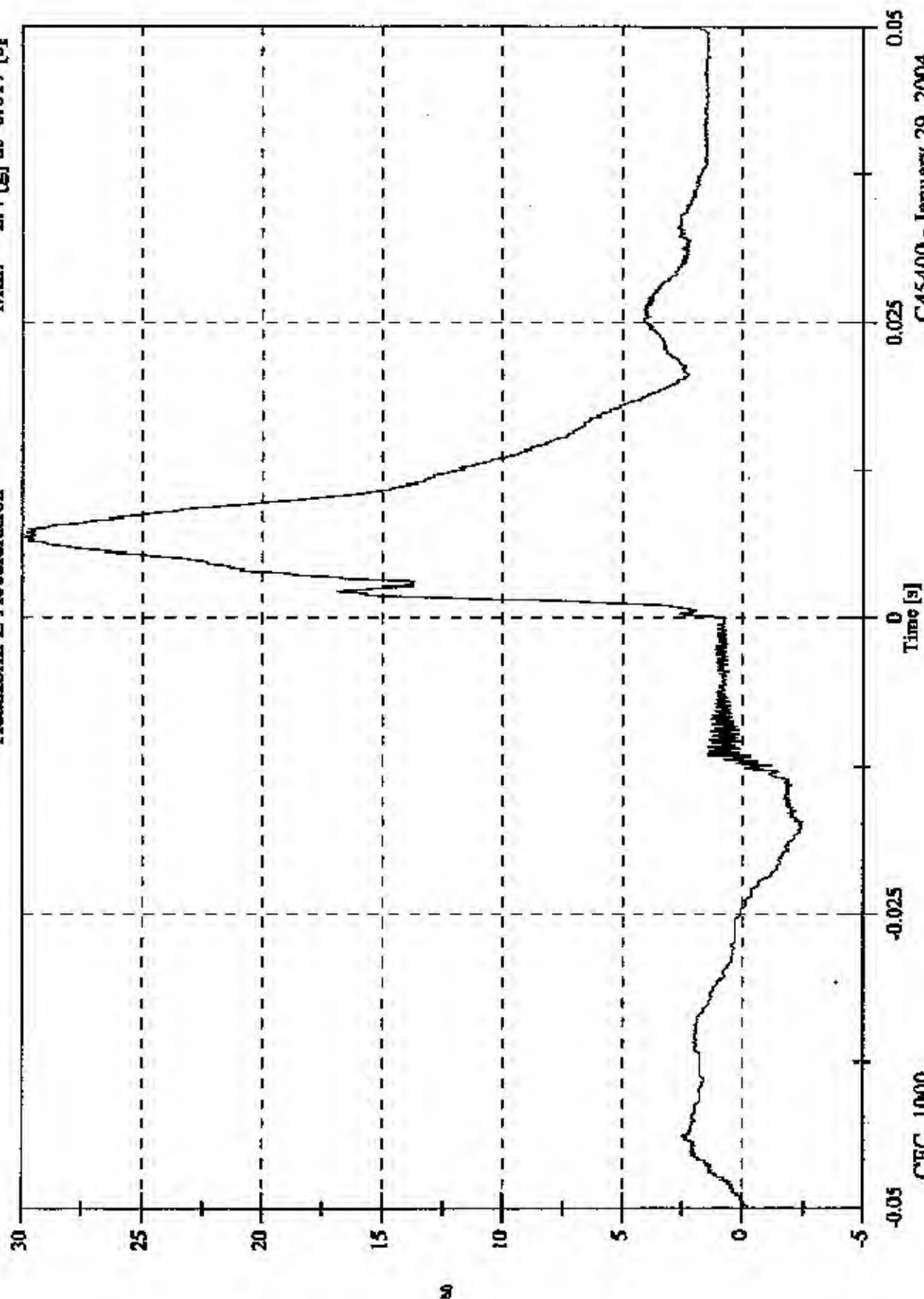


CFC\_1000

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Z Acceleration

Max: 29.9 [g] at 0.007 [s]  
Min: -2.4 [g] at -0.017 [s]



CFC\_1000

-0.025

Time [s]

0.025

0.05

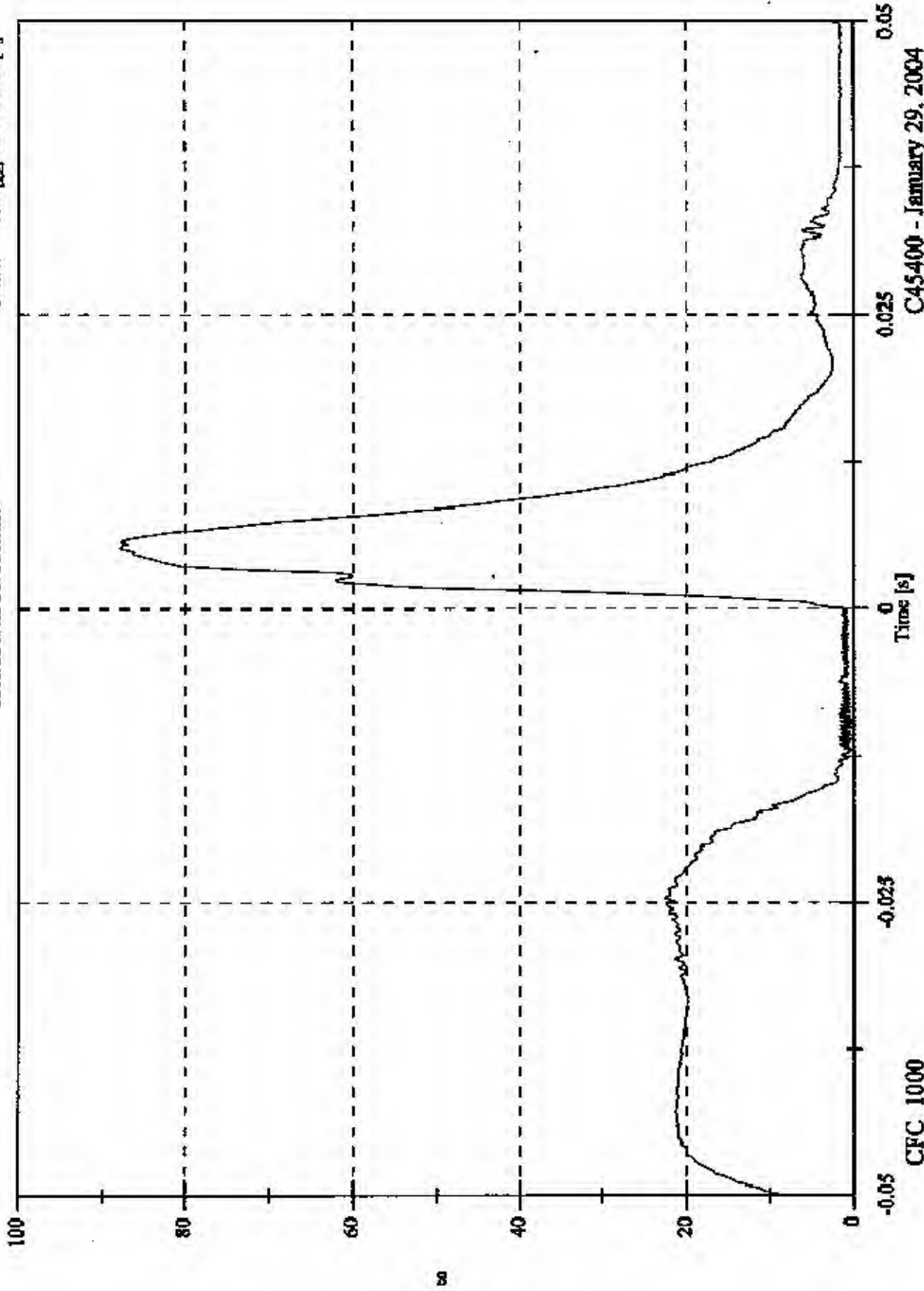
C45400 - January 29, 2004



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 87.7 [g] at 0.005 [s]  
Min: 0.2 [g] at -0.010 [s]



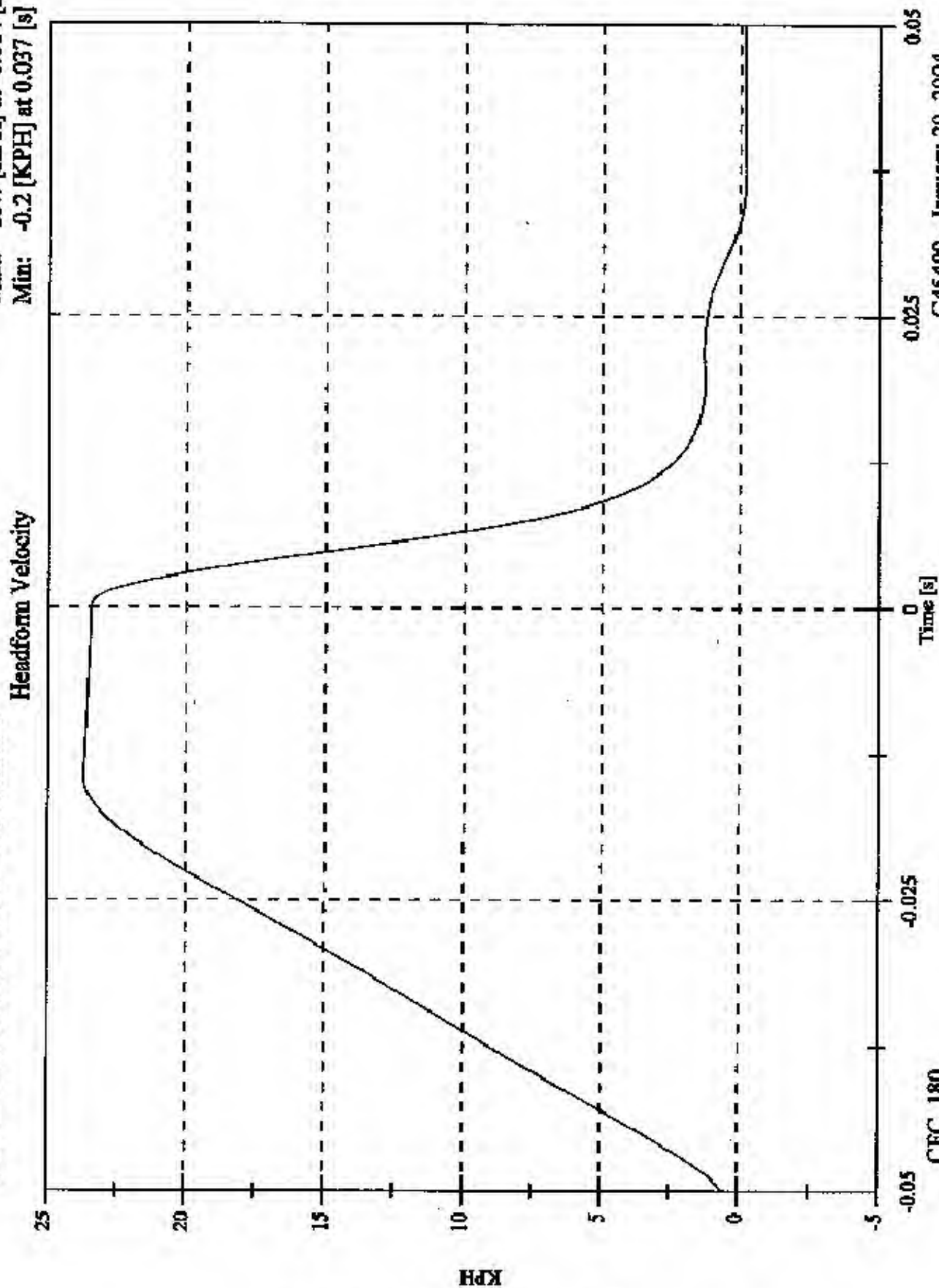
CFC\_1000

Time [s]

C45400 - January 29, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 23.7 [KPH] at -0.014 [s]  
Min: -0.2 [KPH] at 0.037 [s]



CFC\_180

FMVSS 2011 C45400  
04 MAZDA G UNBP  
REF TEST 29 JAN 04  
JUN 207 VER 31

THE HEART OF THE MATTER

226-05





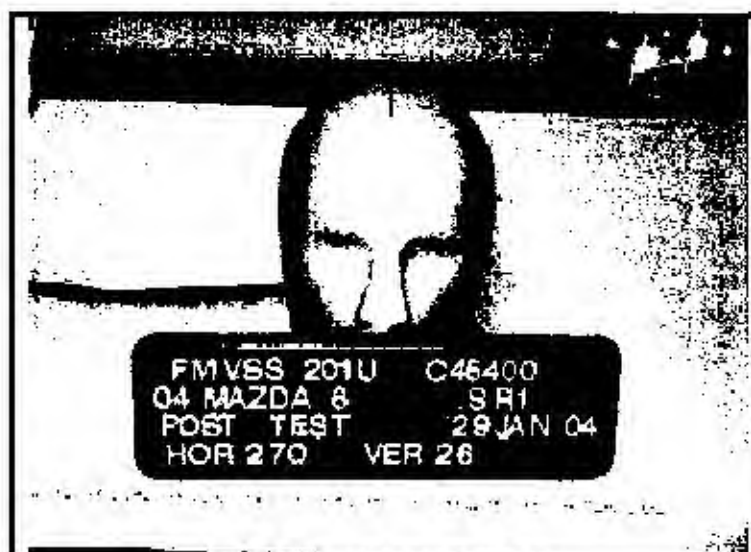
NOT FOR SALE (Grand Malibu)



VEHICLE YEAR/MAKE/MODEL/STYLE:	2004 Mazda 6 4-door Sedan
VIN:	1YVFP80C345N22817
DATE OF MANUFACTURE:	09/03 (SEE CERTIFICATION LABEL)
COLOR:	Silver

Test Number:	10
Test Date:	January 29, 2004
Target Location:	Side Rail
Target Code:	SR1
Horizontal Impact Angle:	270°
Vertical Impact Angle:	26°
Ambient Temperature:	20°C
Relative Humidity:	16
Time of Impact:	12:00
Headform Number:	0355

Impact Point Description (from lower midpoint on midsagittal line)				
On Centerline	7	x	mm right	mm left
On Centerline	18		mm up	



POST-IMPACT SRI HEADFORM

Free Motion HIC	409.8
HIC(d)	475.5
Impact Velocity (kph)	23.56
HIC T1 (msec)	2.3
HIC T2 (msec)	14.1

# FMVSS 201U IMPACT TEST - 2004 Mazda 6 C45400 - SR1

FMH Headform 0355

Location: SR1

Test Date: January 29, 2004

Work File: SR1

## TEST RESULTS

Lab Temperature: 20 °C

HICd: 475.5

Lab Humidity: 16 %

HIC (36ms): 409.8

Velocity at Impact: 23.56 KPH

t1: 2.3 msec

t2: 14.1 msec

Duration: 11.8 msec

Free Flight Distance: 221.99 mm

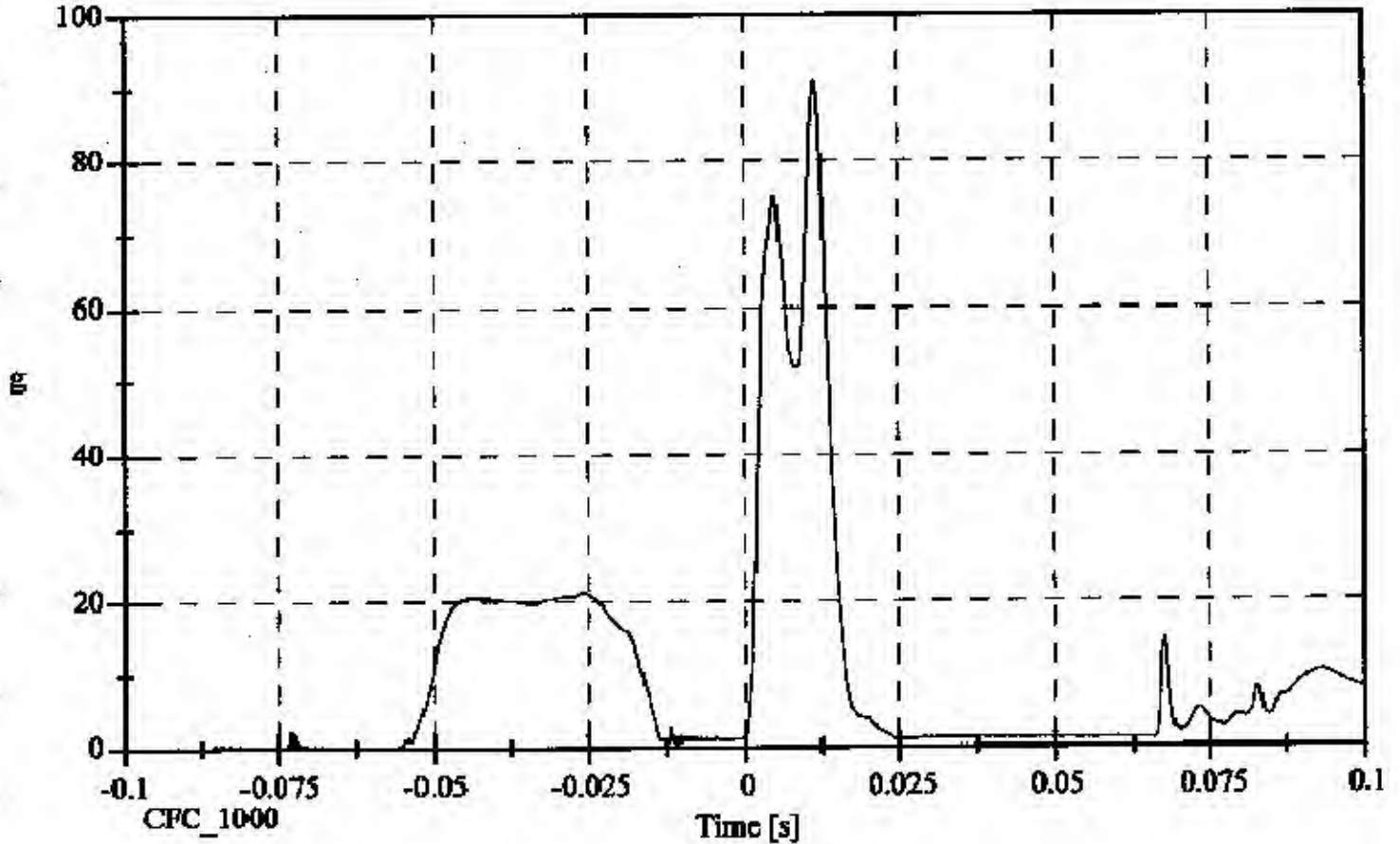
Average Acceleration: 9.3 g

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Resultant

Max: 90.9 [g] at 0.011 [s]

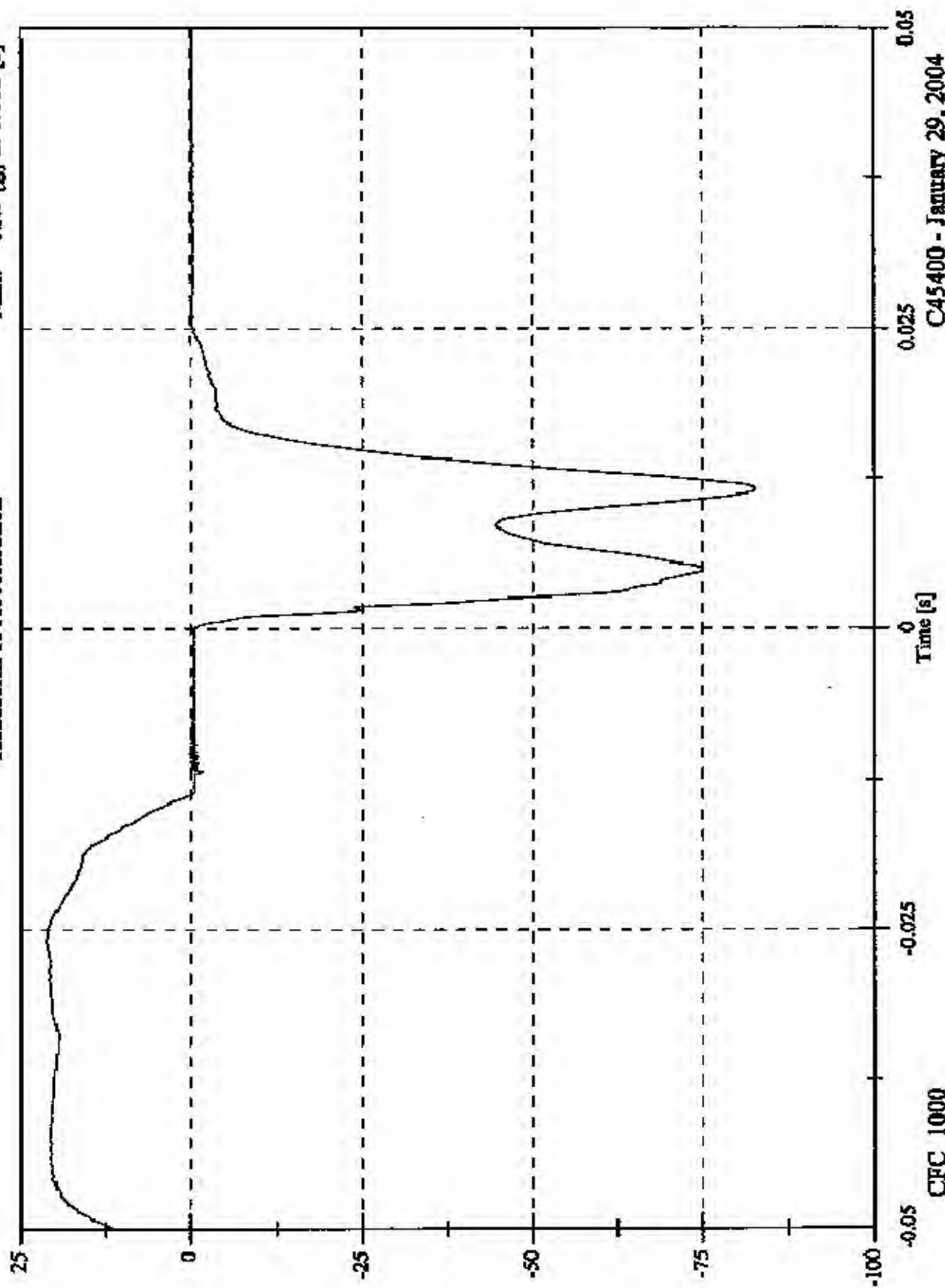
Min: 0.0 [g] at -0.087 [s]



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 21.3 [g] at -0.026 [s]  
Min: -82.9 [g] at 0.012 [s]

Headform X Acceleration



CFC\_1000

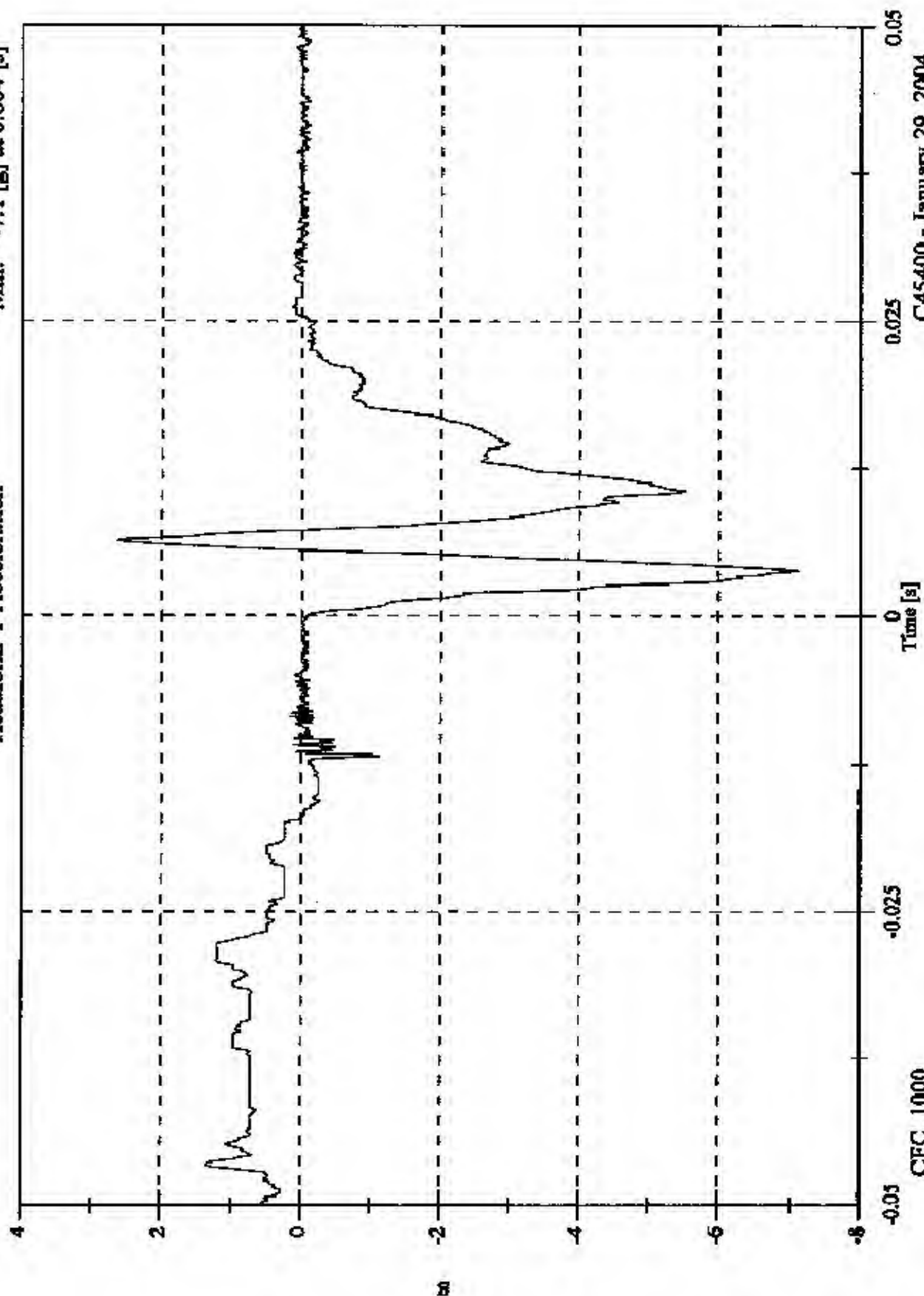
Time [s]

C45400 - January 29, 2004

# FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Y Acceleration

Max: 2.6 [g] at 0.006 [s]  
Min: -7.1 [g] at 0.004 [s]



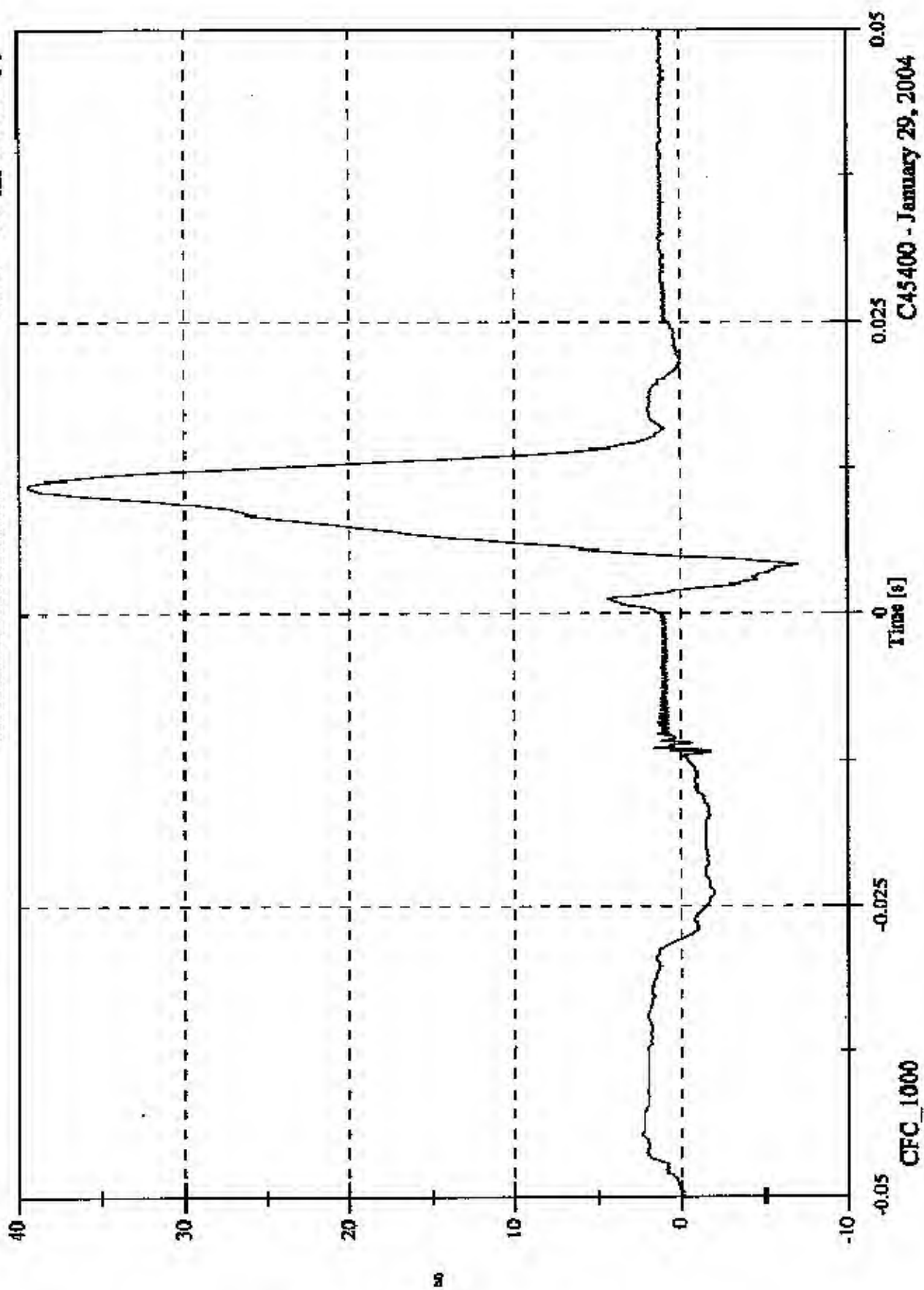
C45400 - January 29, 2004



FMVSS 201U IMPACT TEST - 2004 Mazda 6

Headform Z Acceleration

Max: 39.4 [g] at 0.011 [s]  
Min: -7.1 [g] at 0.004 [s]



CFC\_1000

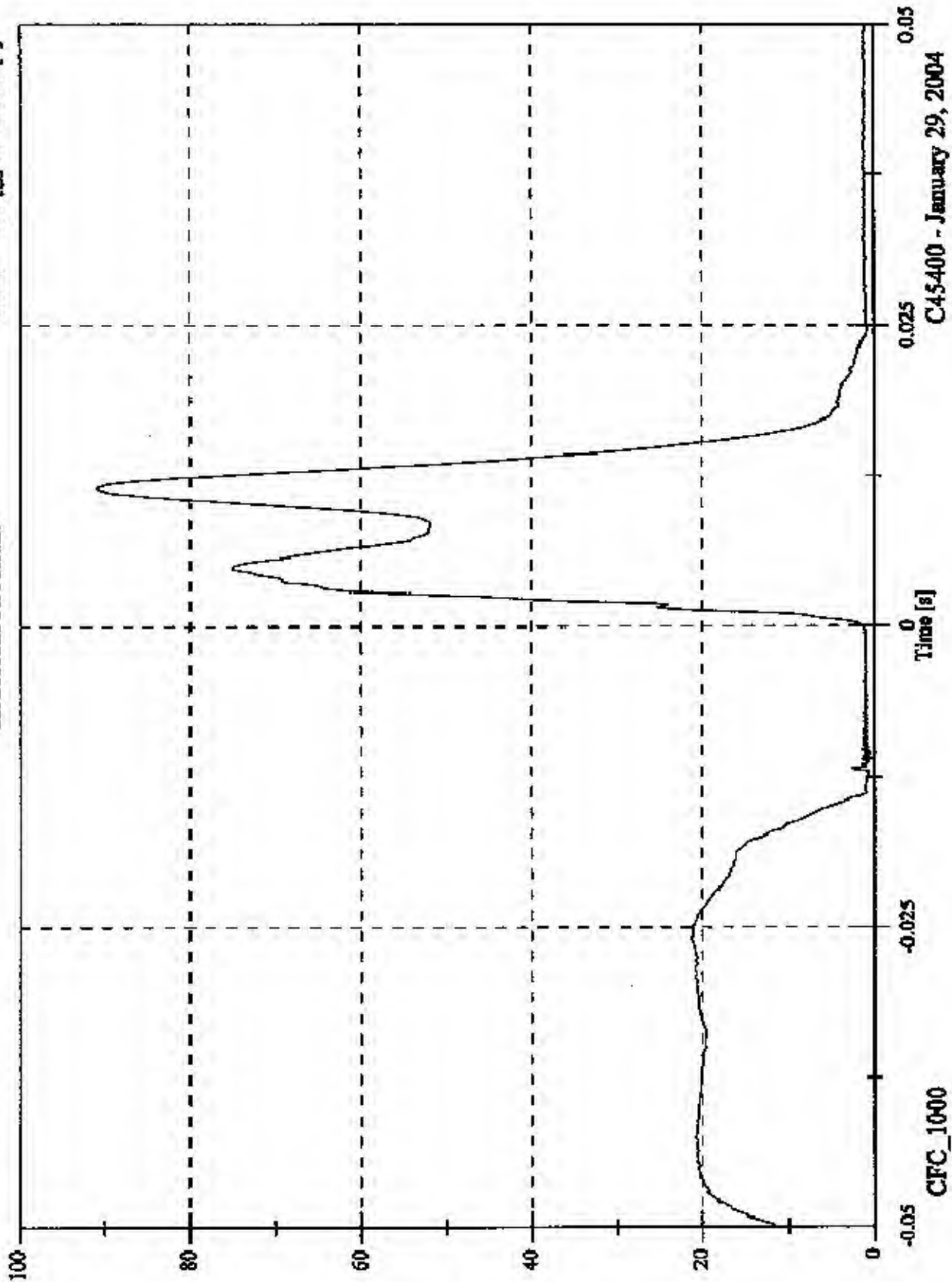
Time [s]

C45400 - January 29, 2004

# FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 90.9 [g] at 0.011 [s]  
Min: 0.4 [g] at -0.011 [s]

Headform Resultant



CFC\_1000

-0.025

0.025

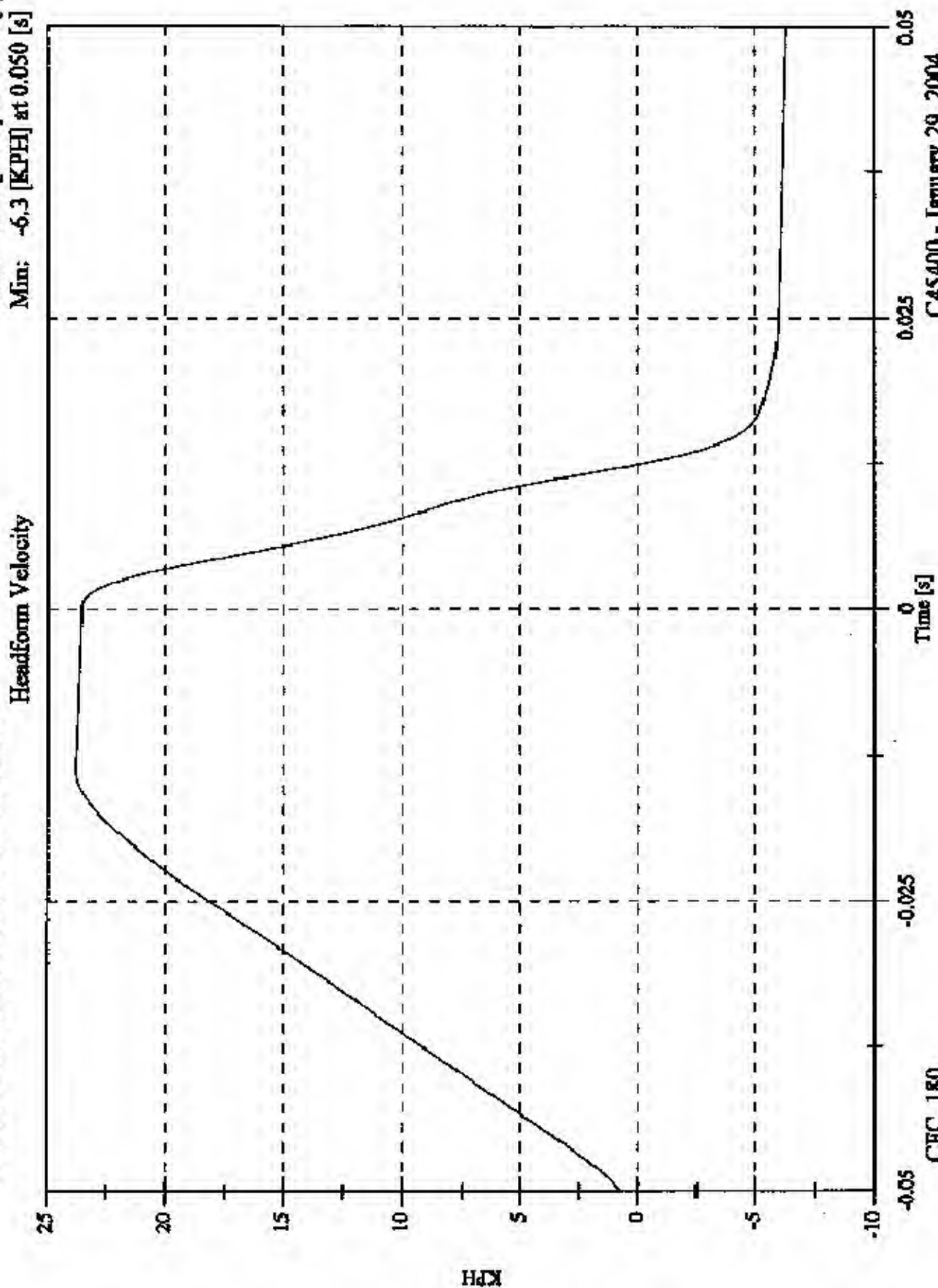
0.05

Time [s]

C45400 - January 29, 2004

FMVSS 201U IMPACT TEST - 2004 Mazda 6

Max: 23.8 [KPH] at -0.014 [s]  
Min: -6.3 [KPH] at 0.050 [s]



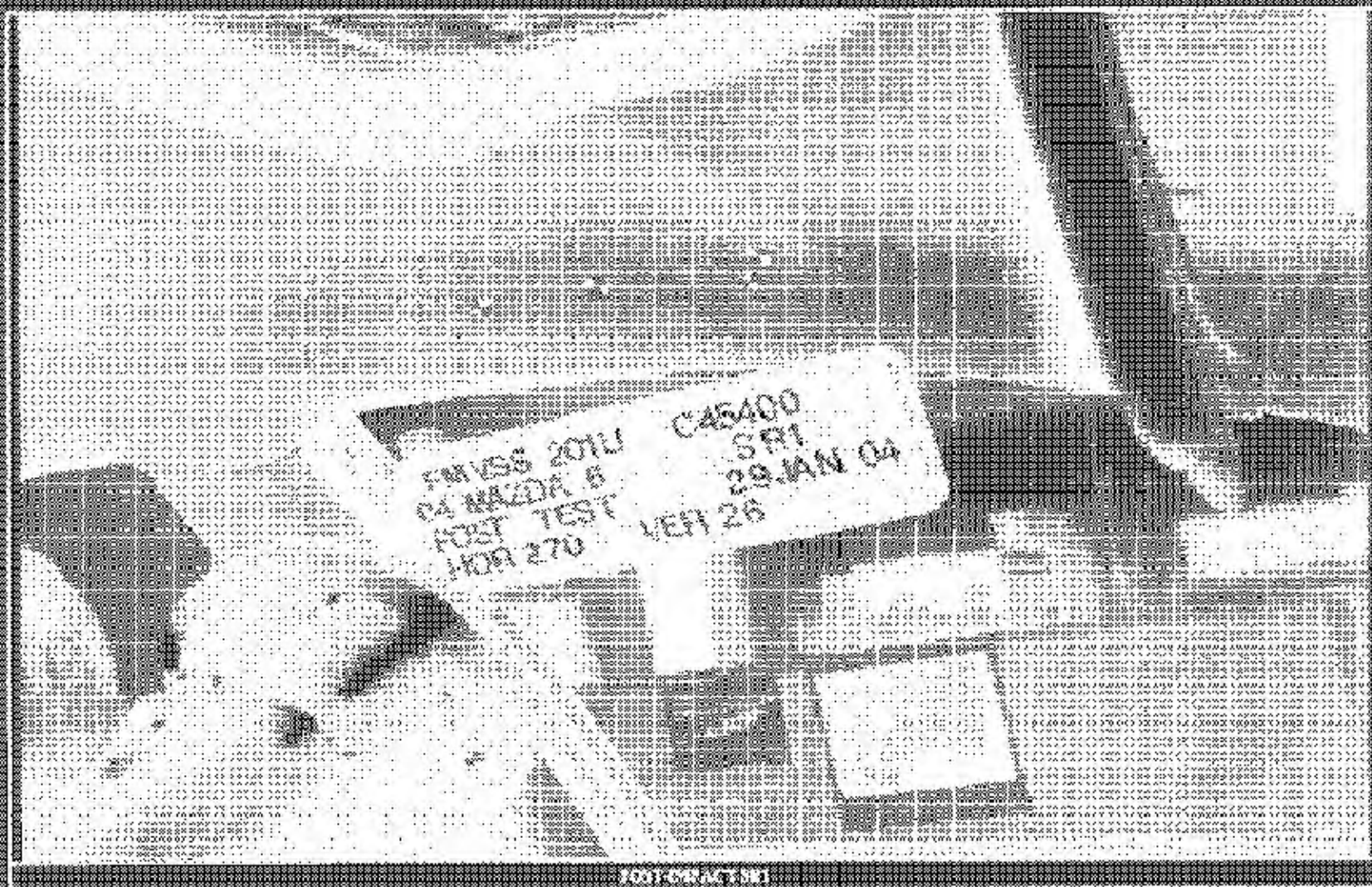
C45400 - January 29, 2004





PHOTOGRAPH





2011-01-29

**APPENDIX A**

**PHOTOGRAPHS**

## PHOTOGRAPHS

FIGURE	VIEW
A-1	LEFT SIDE VIEW OF VEHICLE
A-2	RIGHT SIDE VIEW OF VEHICLE
A-3	3/4 FRONTAL VIEW FROM LEFT SIDE OF VEHICLE
A-4	3/4 REAR VIEW FROM RIGHT SIDE OF VEHICLE
A-5	VEHICLE'S CERTIFICATION LABEL
A-6	VEHICLE'S TIRE INFORMATION LABEL
A-7	PRE-TEST DRIVER SIDE A-PILLAR
A-8	PRE-TEST DRIVER SIDE FRONT HEADER
A-9	PRE-TEST DRIVER SIDE SIDE RAIL
A-10	PRE-TEST DRIVER SIDE B-PILLAR
A-11	PRE-TEST DRIVER SIDE REAR PILLAR
A-12	PRE-TEST PASSENGER SIDE A-PILLAR
A-13	PRE-TEST PASSENGER SIDE FRONT HEADER
A-14	PRE-TEST PASSENGER SIDE SIDE RAIL
A-15	PRE-TEST PASSENGER SIDE B-PILLAR
A-16	PRE-TEST PASSENGER SIDE REAR PILLAR
A-17	POST-TEST DRIVER SIDE A-PILLAR
A-18	POST-TEST DRIVER FRONT HEADER
A-19	POST-TEST DRIVER SIDE SIDE RAIL
A-20	POST-TEST DRIVER SIDE B-PILLAR
A-21	POST-TEST DRIVER SIDE REAR PILLAR
A-22	POST-TEST PASSENGER SIDE A-PILLAR
A-23	POST-TEST PASSENGER FRONT HEADER
A-24	POST-TEST PASSENGER SIDE SIDE RAIL
A-25	POST-TEST PASSENGER SIDE B-PILLAR
A-26	POST-TEST PASSENGER SIDE REAR PILLAR





Figure A-1. LEFT SIDE VIEW OF VEHICLE 2





Figure A-2 RIGHT SIDE VIEW OF VEHICLE





Figure A-1 1A FRONTAL VIEW FROM LEFT SIDE OF VEHICLE





Figure A-4 34 REAR VIEW FROM RIGHT SIDE OF VEHICLE

PROD. BY AUTO ALLIANCE INTERNATIONAL, INC.  
FOR MAZDA MOTOR CORPORATION  
MADE IN U.S.A.

DATE: 09/03 GVINR: 49171B/1958X6  
FRONT WTR: 2359LB/1070KG REAR WTR: 1958LB/888KG  
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR  
VEHICLE SAFETY, BUMPER, AND EMISSION STANDARDS  
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.  
VIN: 1YVFPB0C345N22817  
TYPE: PASSENGER



EXT. PWT:	28	A	CRC	1050			
WB	DR	IN TR	TP/PS	R	AXLE	TR	SPR

1203C19292265

ZFP

V P850152047248

Figure A-5 : VEHICLE'S CERTIFICATION LABEL



VEHICLE CAPACITY WEIGHT (GK2A)  
CAPACITE PORTEUSE DU VEHICULE 385kg(850 lbs)

FRONT SEAT  
SIÈGE AVANT . . . . 2

REAR SEAT  
SIÈGE ARRIÈRE . . . 3

SEATING CAPACITY  
NOMBRE DE PLACES TOTAL . . . . 5

TIRE INFLATION PRESSURE	FRONT/AV.	REAR/AR.
PRESSION DE GONFLAGE DES	220	220
PNEUS KPa(Kgf/cm <sup>2</sup> )<p.s.i.,lb/po <sup>2</sup> >	(2.2)<32>	(2.2)<32>

TIRE SIZE  
TAILLE DES PNEUS

P205/60R16 91H  
P215/50R17 93V

Figure A-6: VEHICLE'S TIRE INFORMATION LABEL

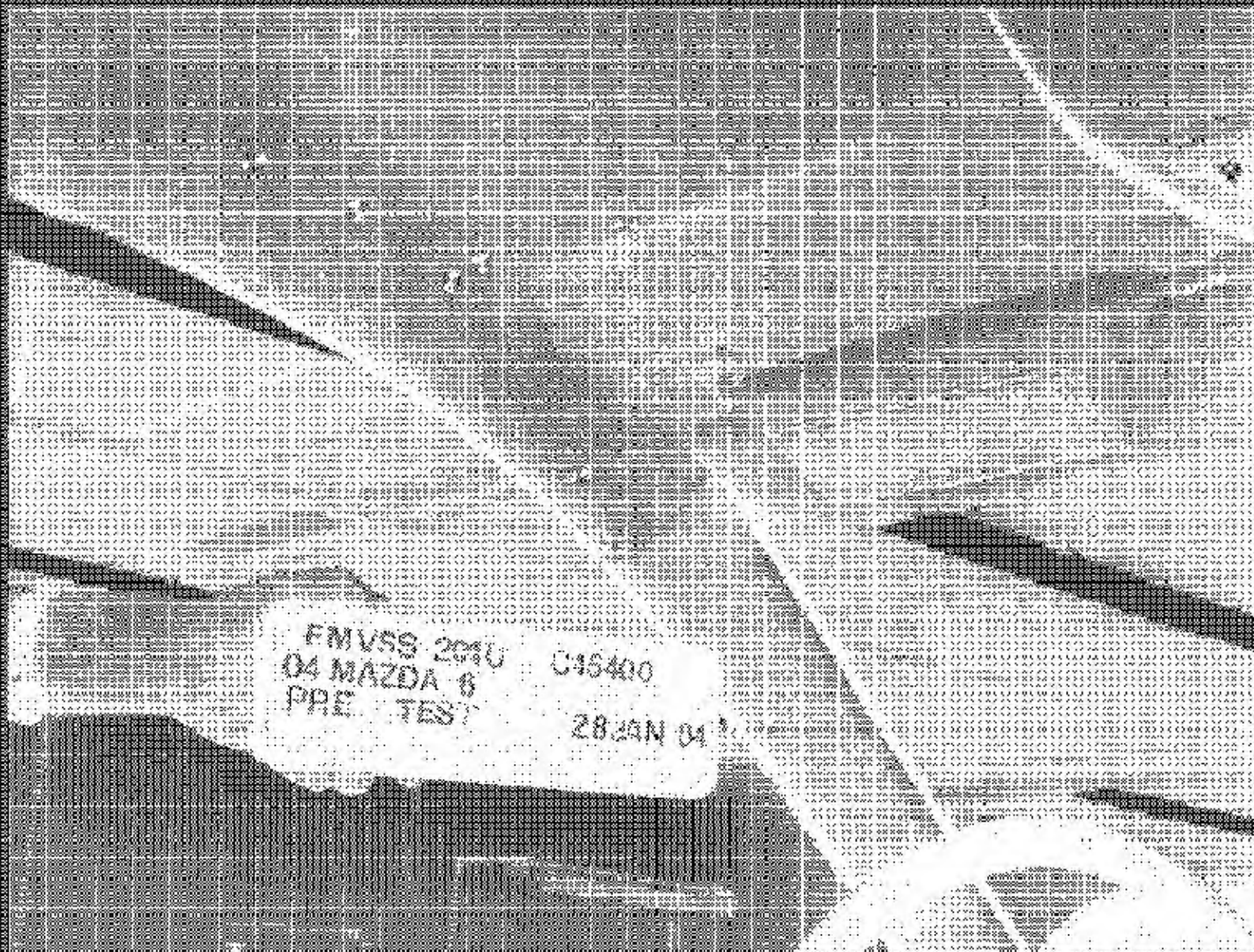


Figure A-7 PRE-TEST DRIVER SIDE A-PILLAR



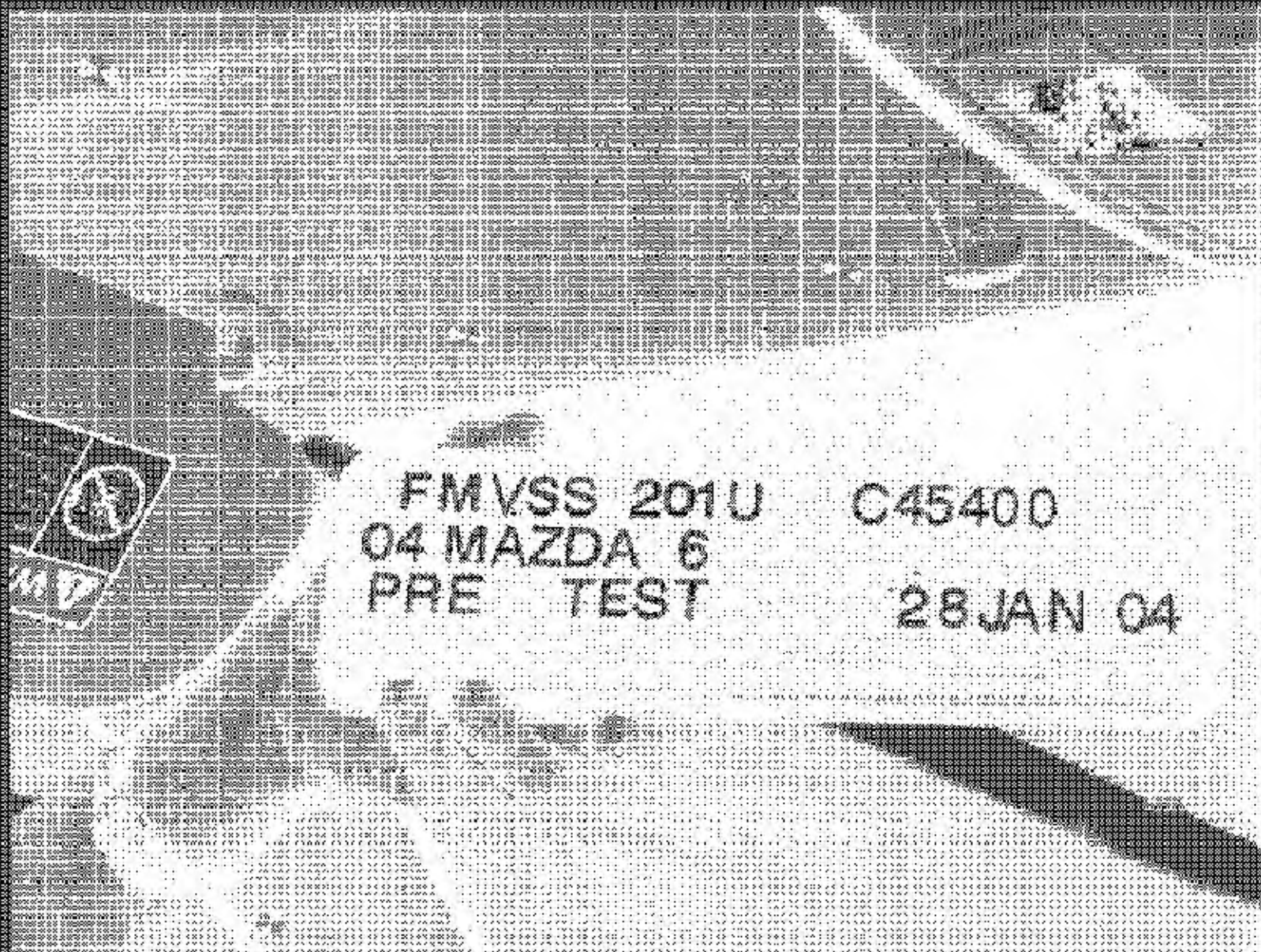


Figure A-3 PRE-TEST DRIVER SIDE FRONT READER



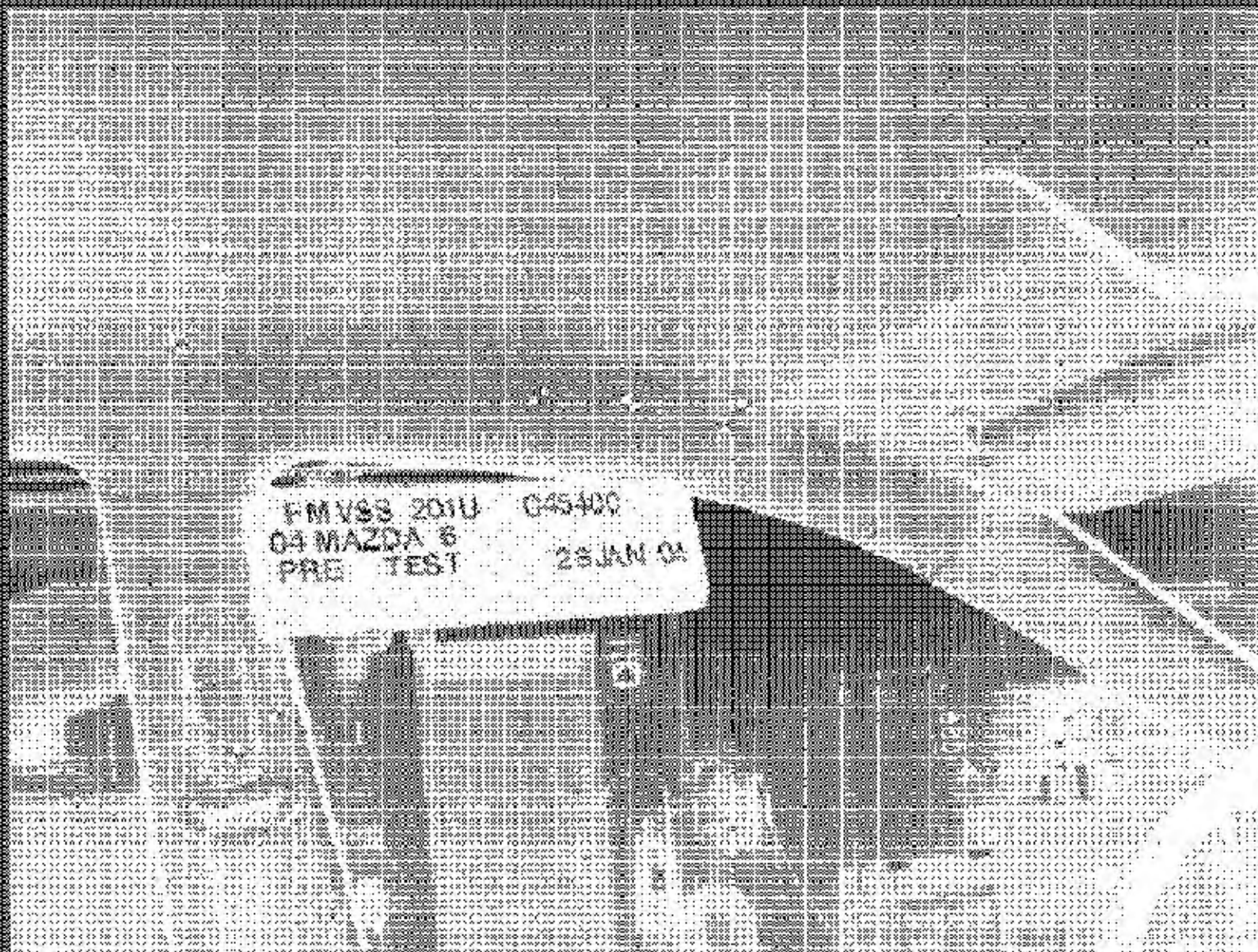


Figure A-2 PRE-TEST DRIVER SIDE SIDE RAIL





Figure A-10 PRE-TSS DRIVER SIDE A-PILLAR



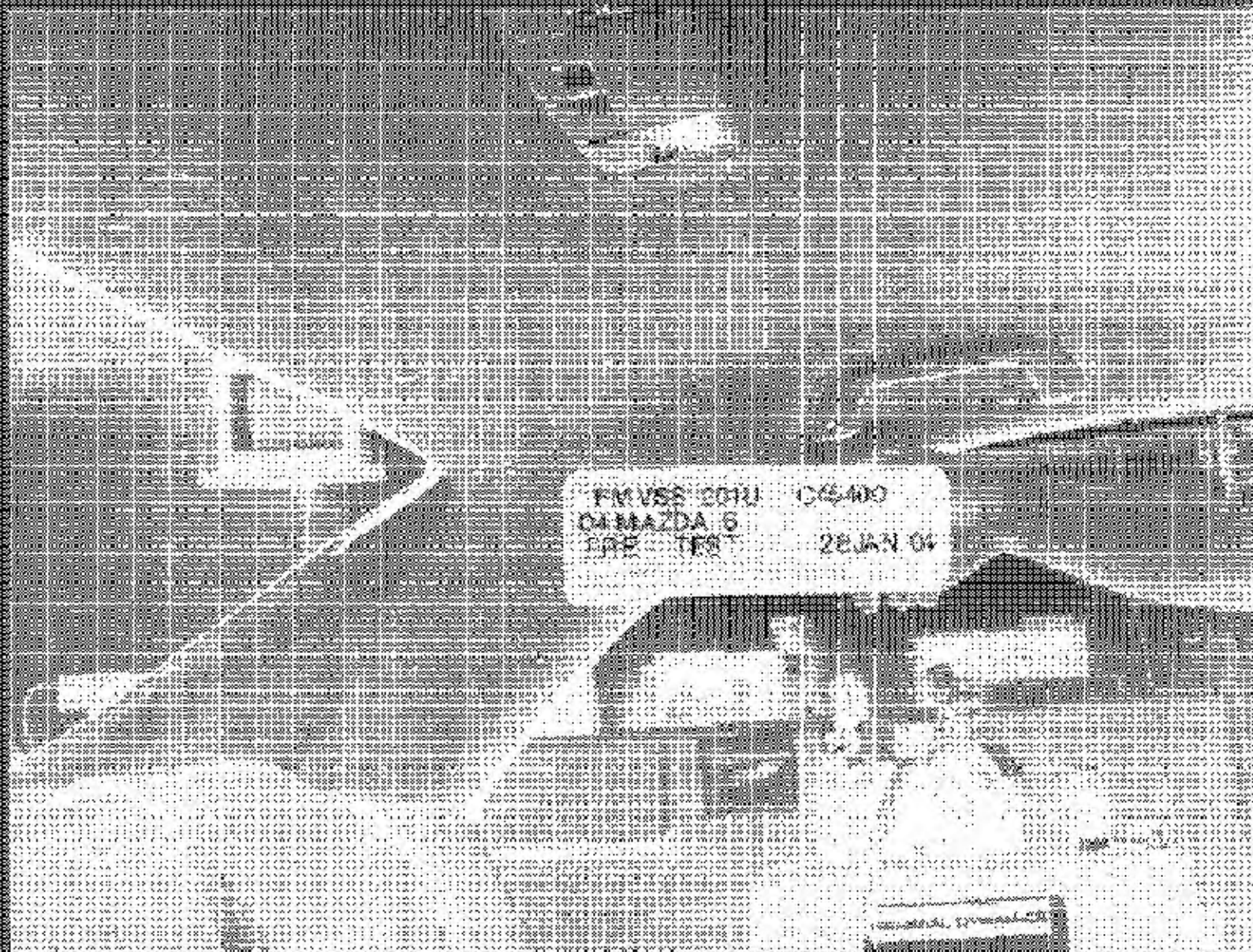


Figure A-11. FIRE TEST DRIVER SIDE REAR PILLAR



ENVSS 2010 C45400  
04 MAZDA 6  
PRE TEST 28 JAN 04

Figure A-17 PRE-TEST PASSING AIR SIDE A-PH LAR



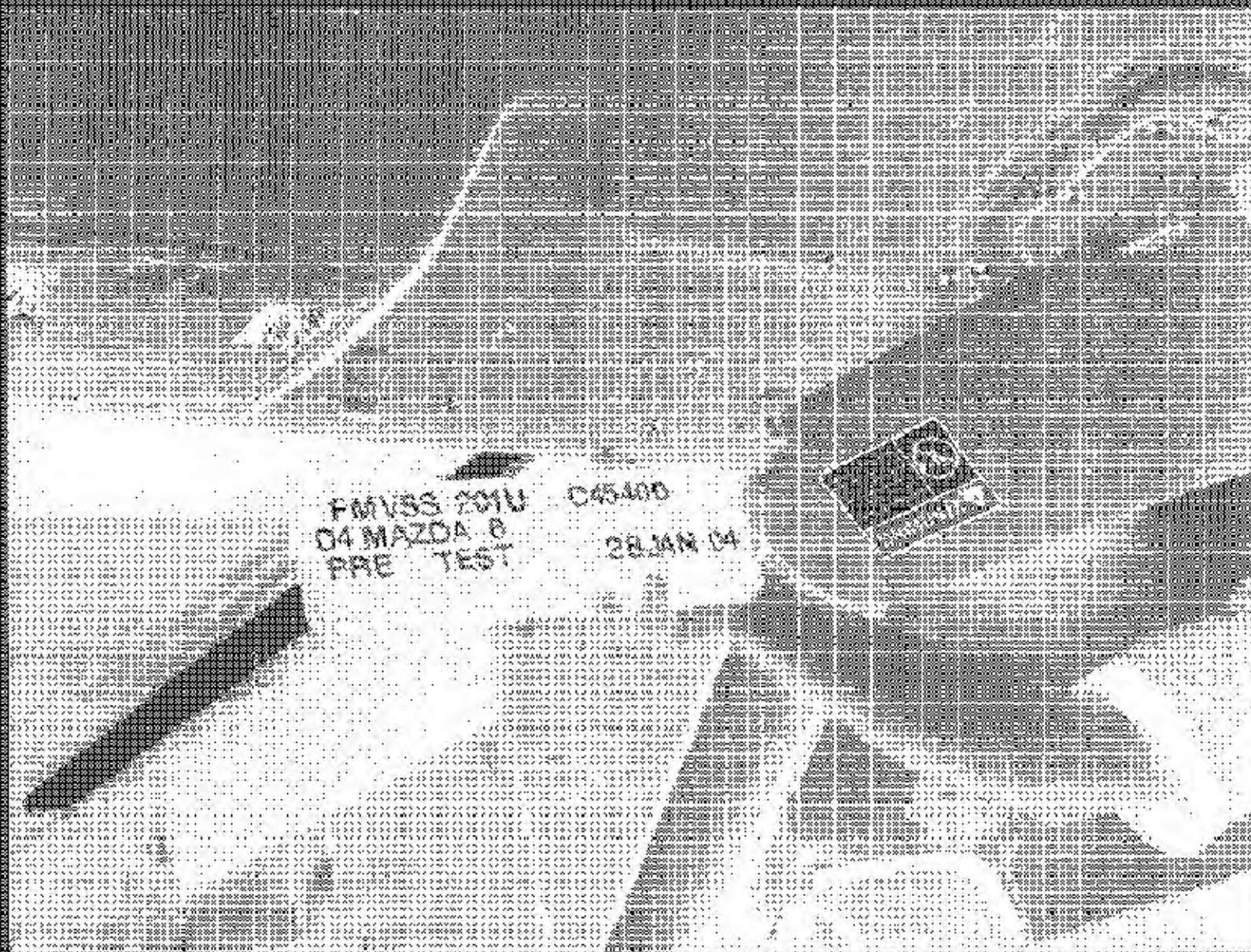


Figure A-13. PRE-TEST PASSENGER SIDE FRONT HEADREST





Figure A-44 PHE TEST PASSENGER SEAT SIDE VIEW





Figure A-15 PRE-TEST PASSENGER SIDE 2-PYLAR



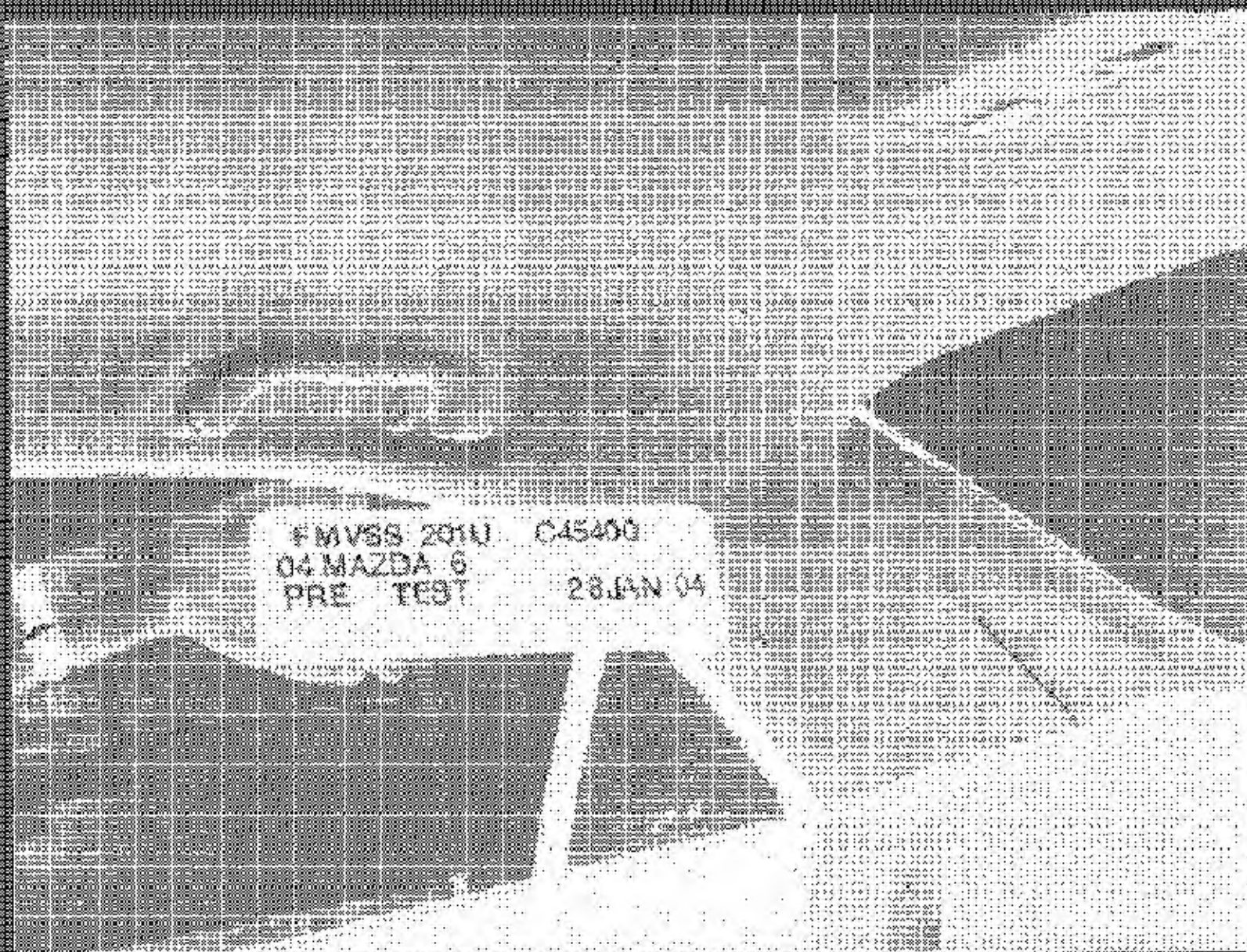


Figure A-16 PRE-TEST PASSENGER SIDE REAR SEAT AREA



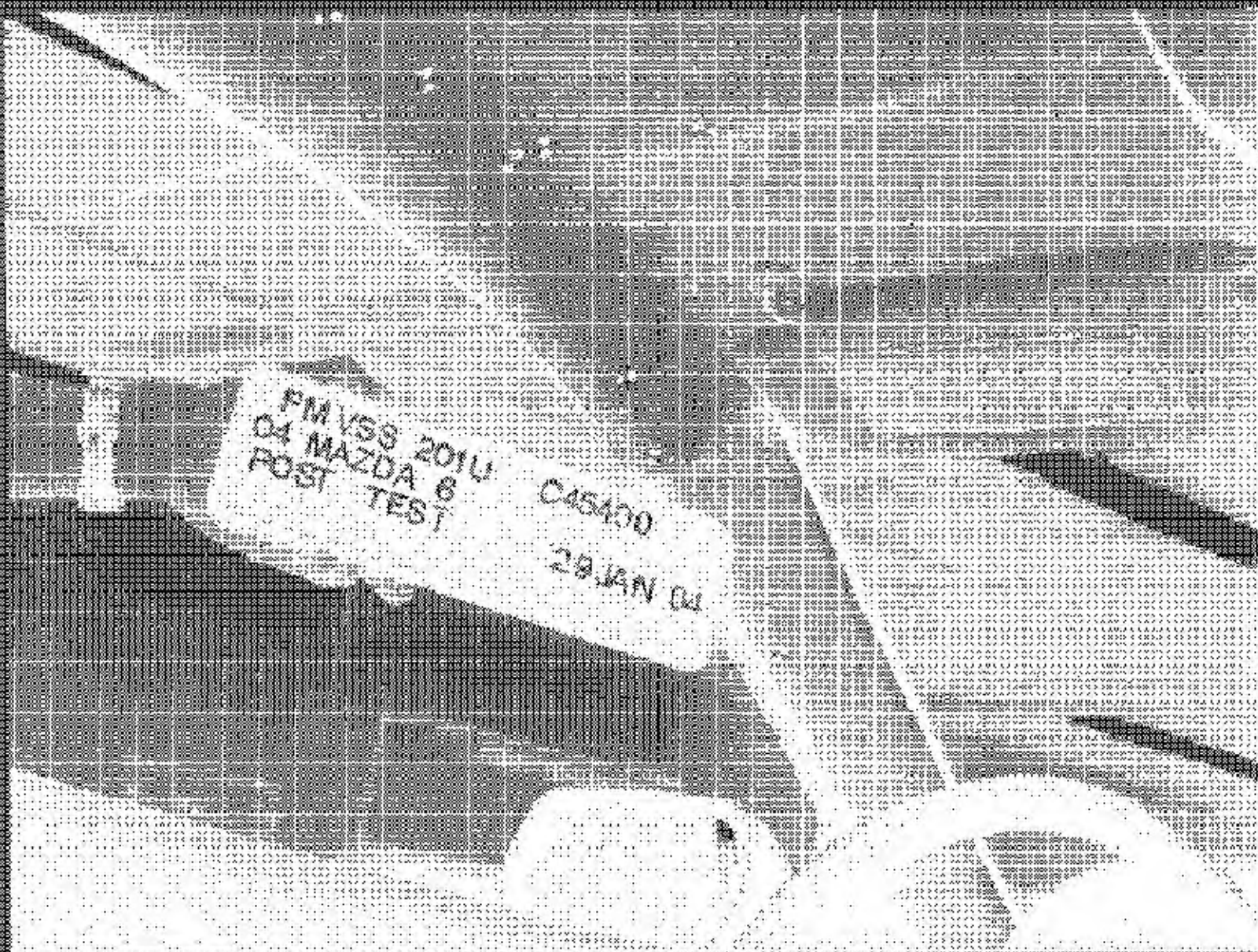


Figure A-47 POST-TEST DRIVER SIDE A-PILLAR



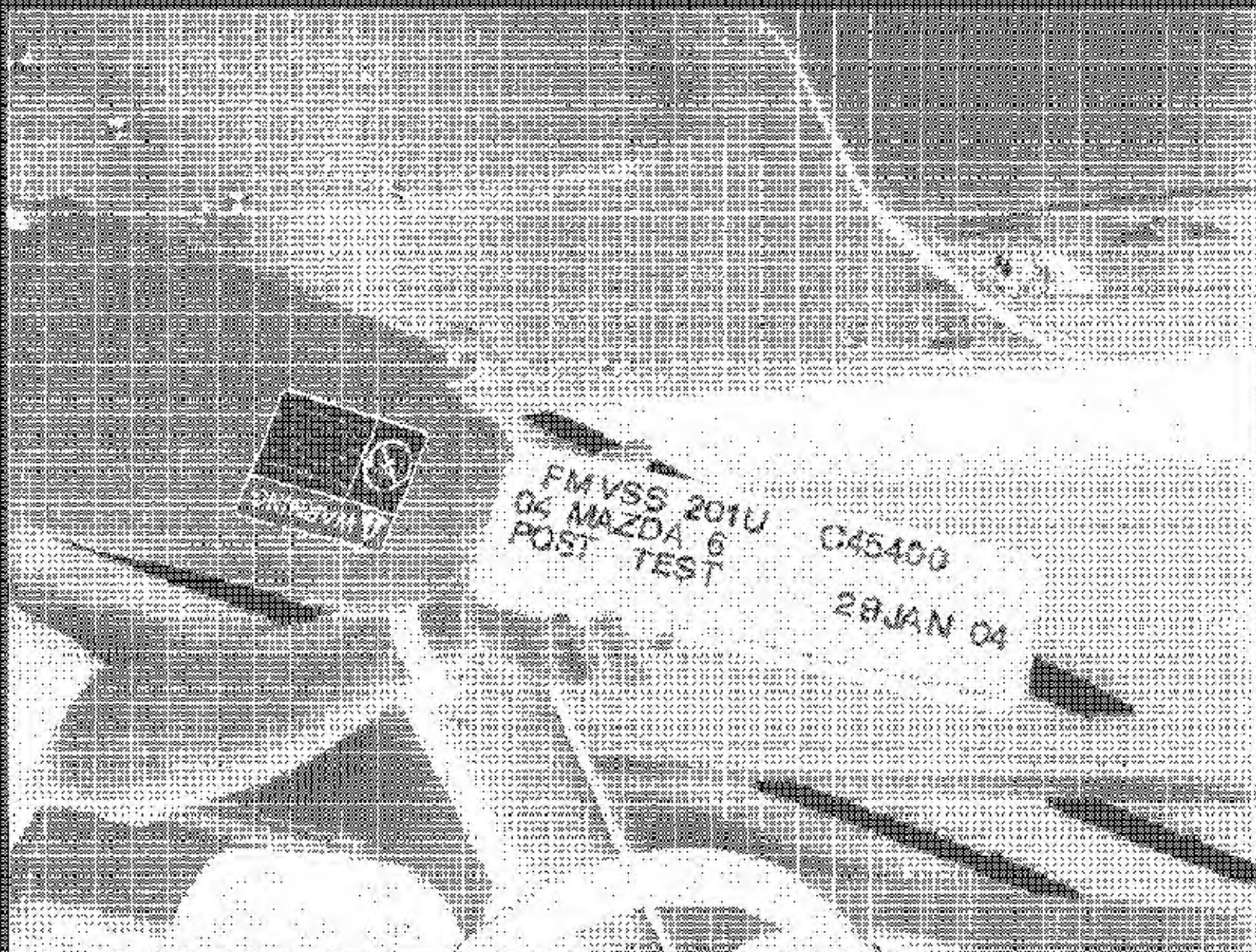


Figure A.18 POST-TEST DRIVER SIDE FRONT HEADER



FM VSB 201U  
04 MAZDA 6  
POST TEST

C45400

29 JAN 01

Figure 4-19 POST-TEST DRIVER SIDE SIDE RAIL



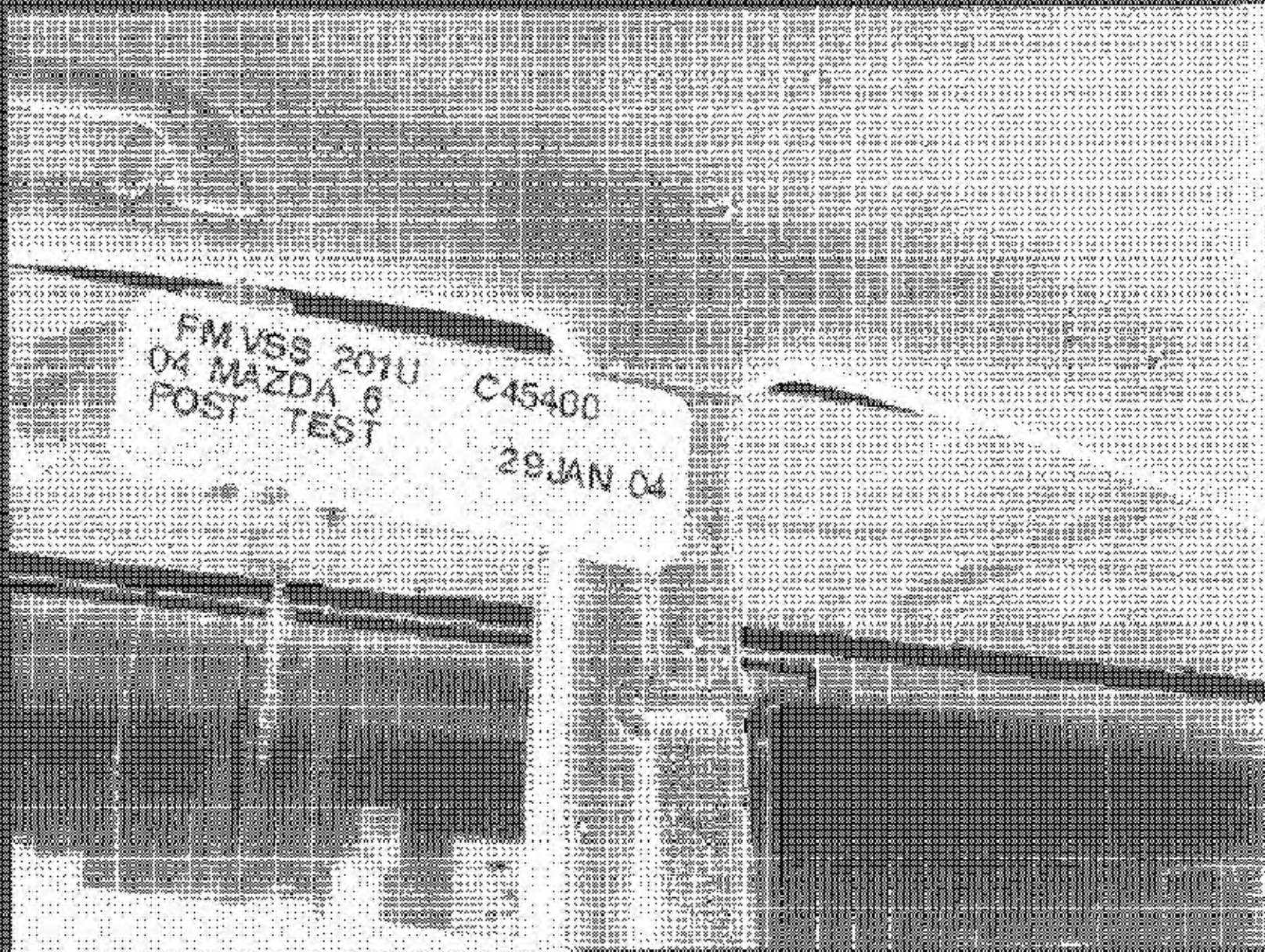


Figure A-30- POST TEST DRIVER SIDE IS POLAR



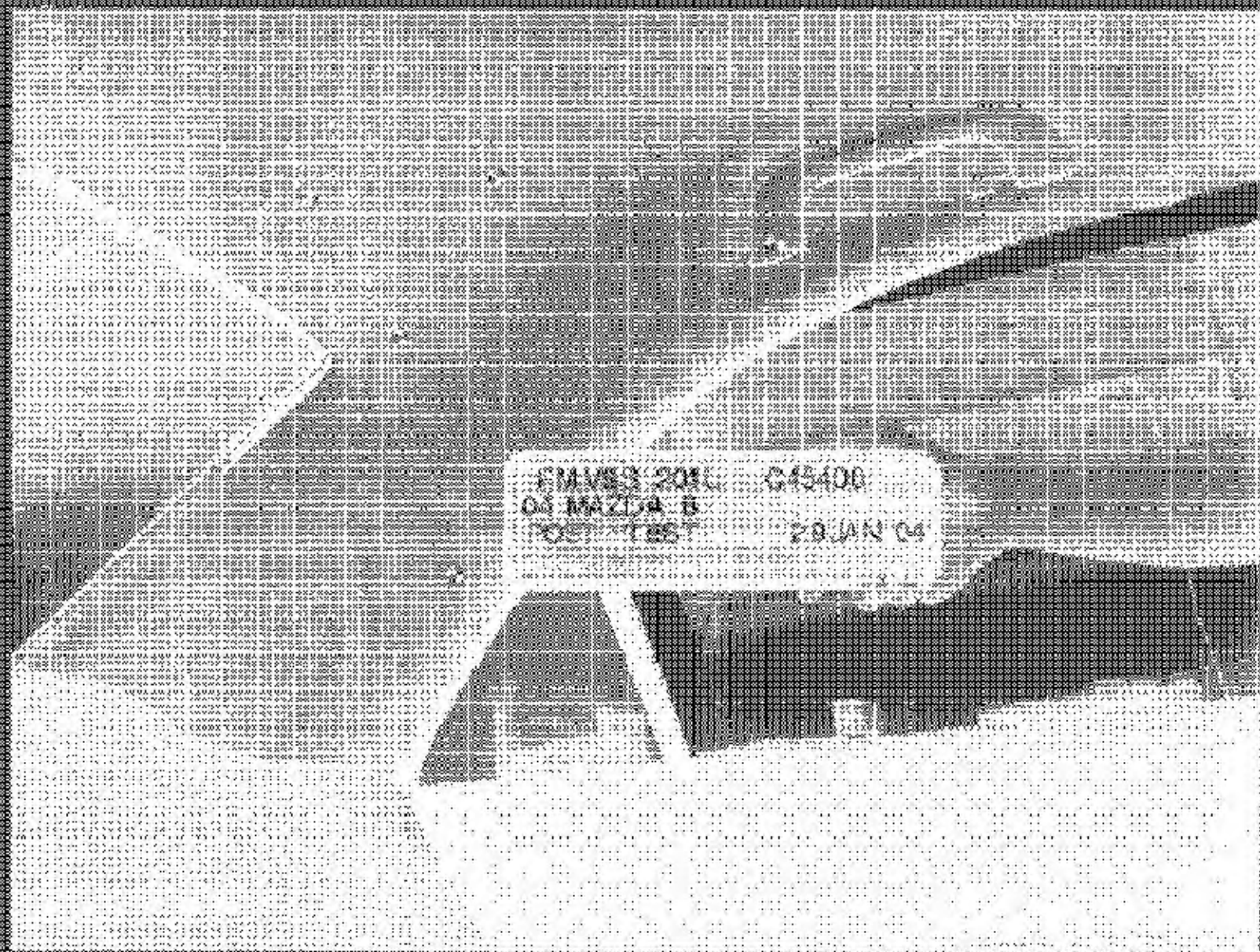


Figure A-21. POST TEST DRIVER SIDE REAR WHEEL



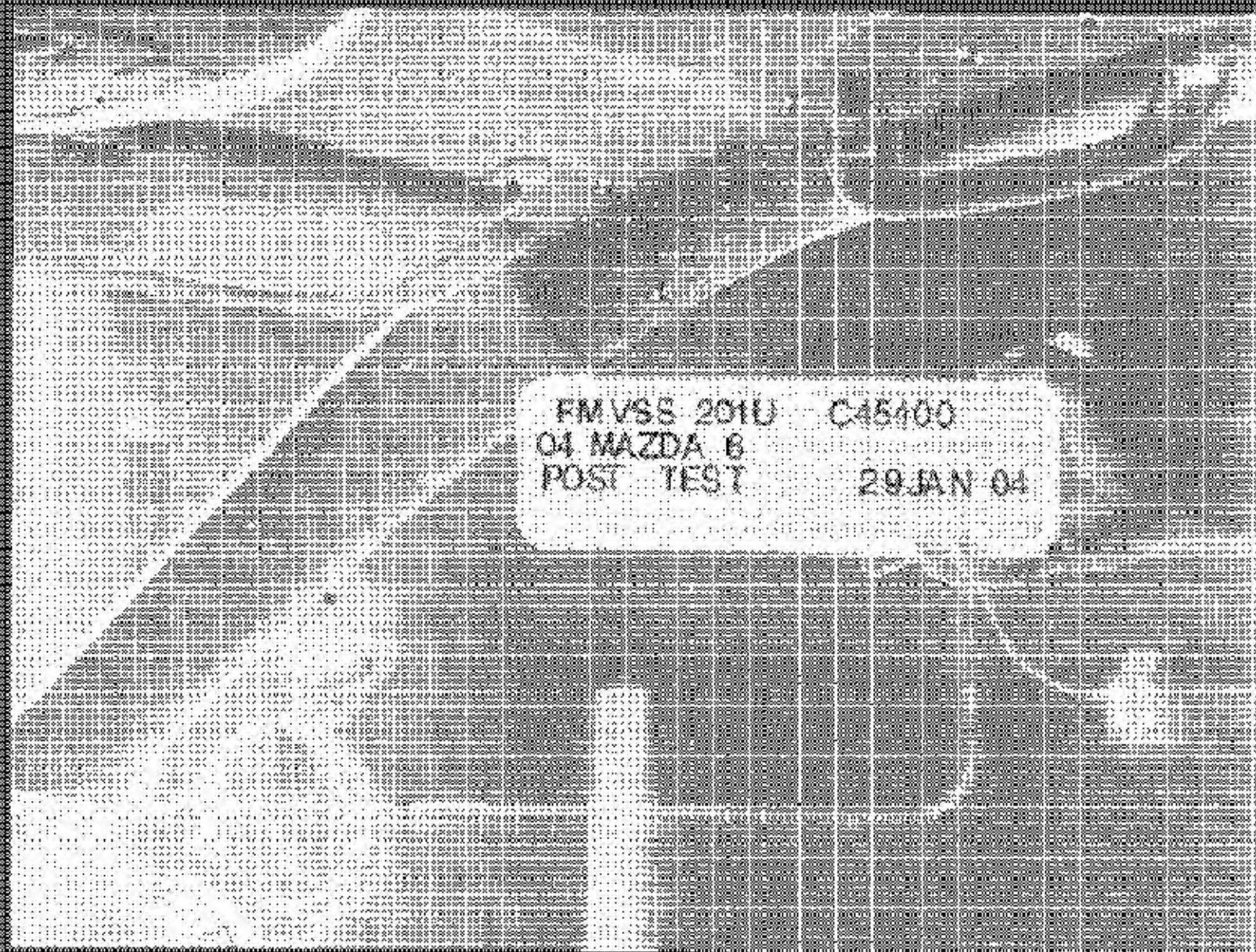


Figure A-22. POST-TEST PASSENGER SIDE A-P1.1 AR



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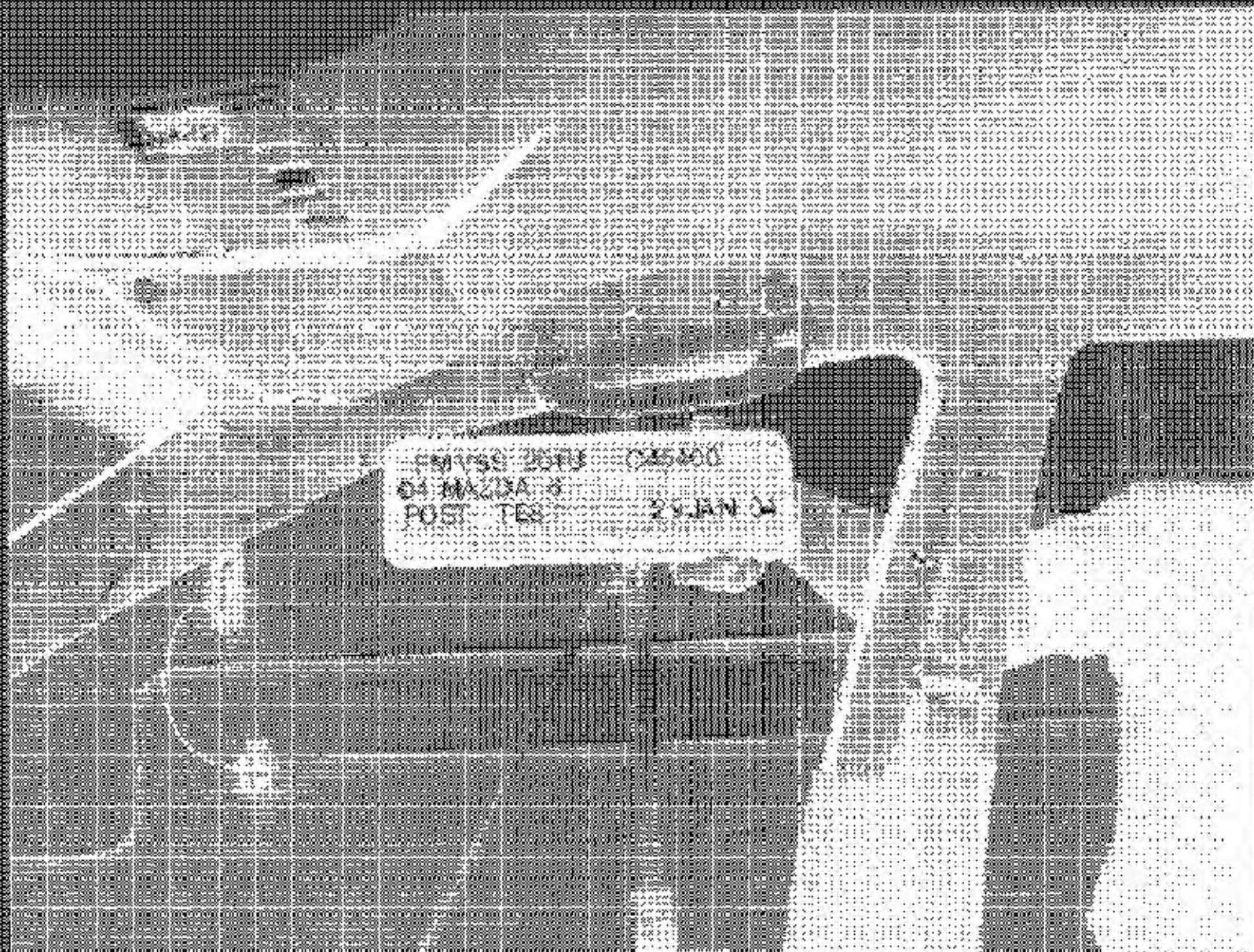


Figure A-24 POST TEST PASSENGER SIDE SEAT/FLOOR



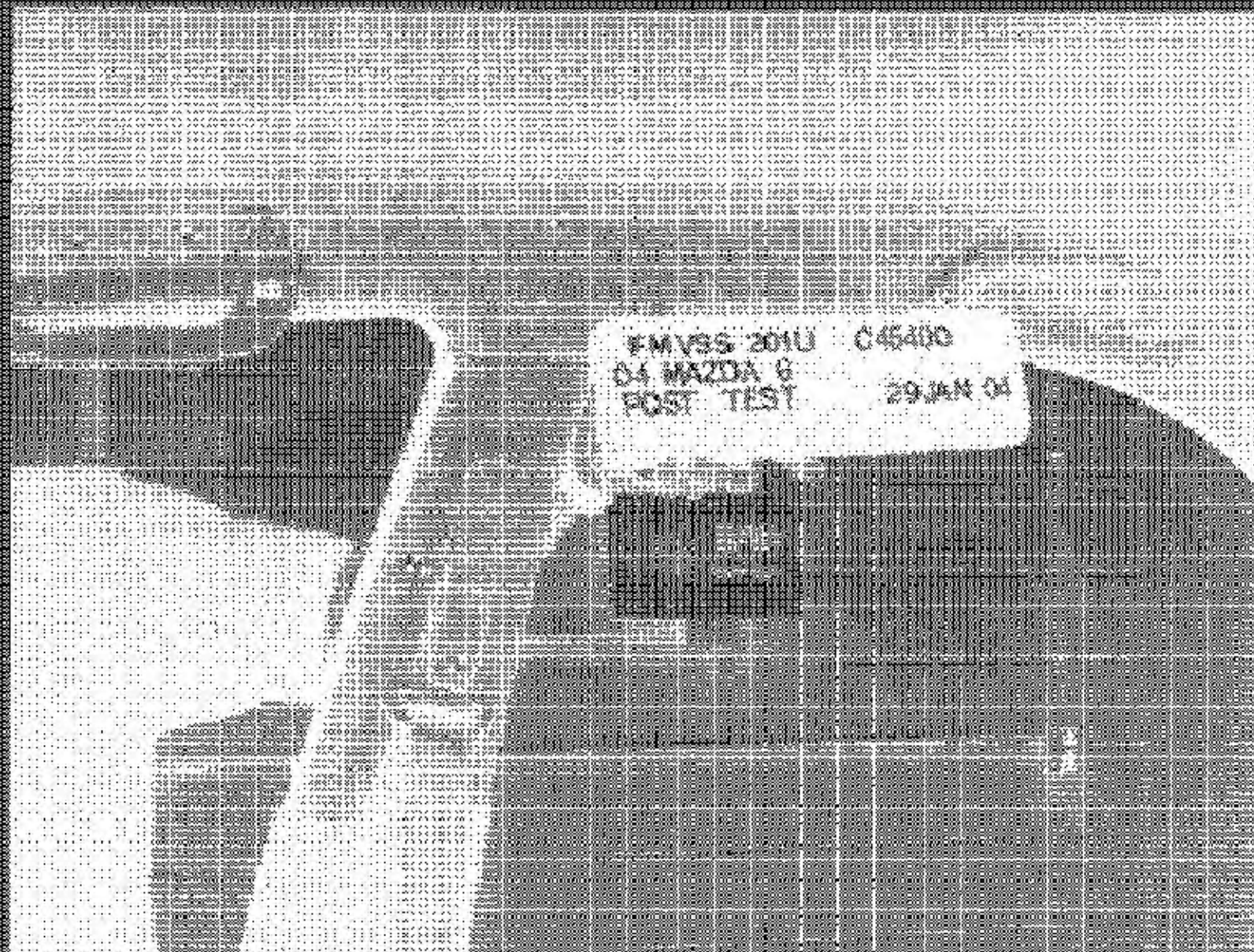


Figure A-25 POST TEST PASSENGER SIDE N-POLAR



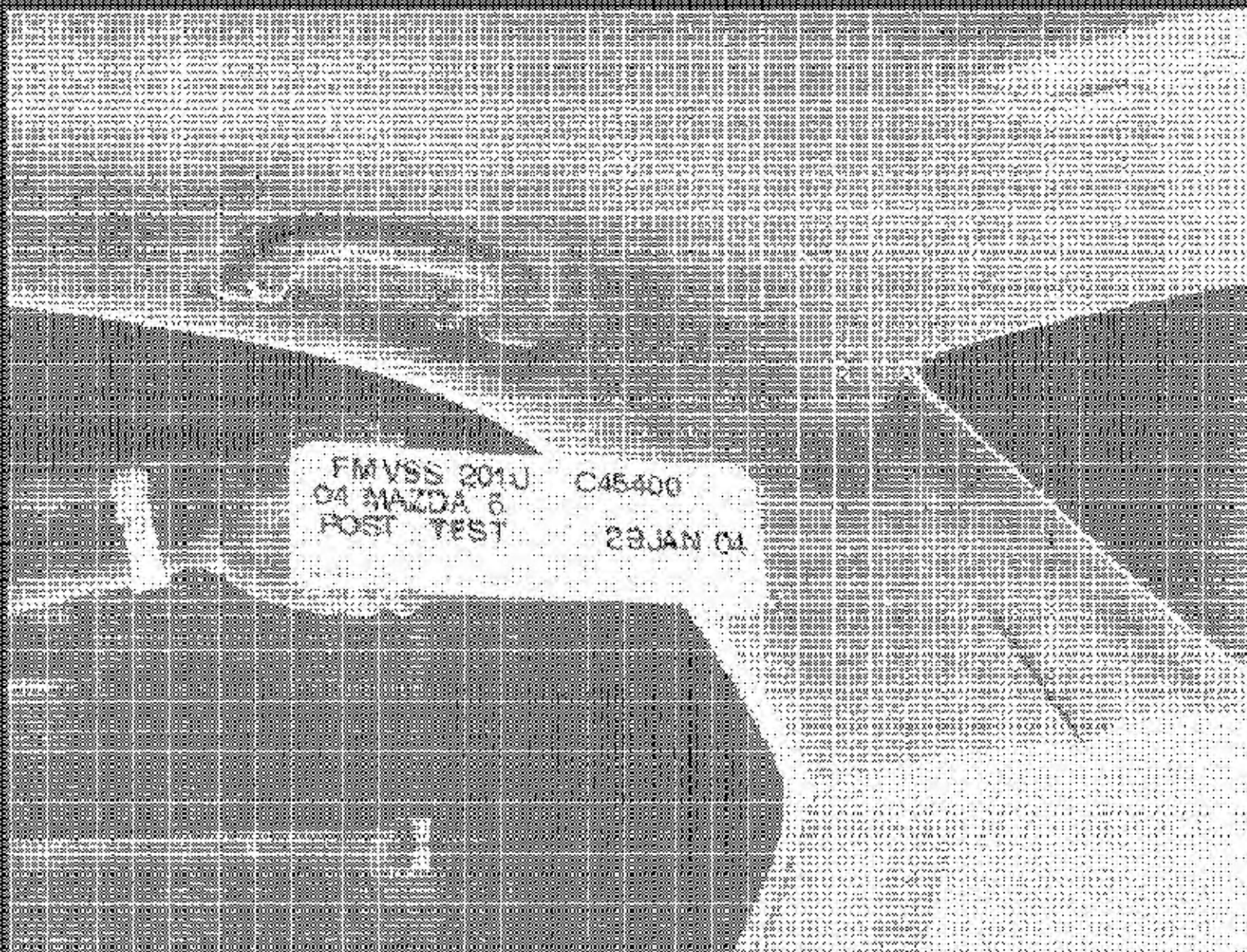


Figure 5.26 POST TEST PASSENGER SIDE REAR PILLAR

## **APPENDIX B**

### **PART 572L PERFORMANCE CALIBRATION IN SUPPORT OF VEHICLE SAFETY COMPLIANCE TESTING FOR OCCUPANT PROTECTION IN INTERIOR IMPACT**

Appendix B contains the results from certification tests performed on the Free Motion Headforms utilized in this test program. The results indicate that the headforms meet all of the performance specifications given in 49 CFR Part 572 Subpart L.

The tests were conducted at the Dummy Certification Test Facility of Veridian Engineering. A summary of the test results are included in this Appendix.



**PART 572L  
HEAD DROP PRE-TEST**

<b>MANUFACTURER:</b>		<b>FIRST TECHNOLOGY SAFETY SYSTEMS</b>	
<b>SERIAL NUMBER:</b>		<b>0642</b>	
<b>CALIBRATION DATE:</b>		<b>January 27, 2004</b>	
<b>TEST PARAMETER</b>	<b>SPECIFICATION</b>		<b>TEST RESULTS</b>
<b>TEMPERATURE</b>	<b>19°C to 26°C</b>		<b>21</b>
<b>RELATIVE HUMIDITY</b>	<b>10% to 70%</b>		<b>16</b>
<b>PEAK RESULTANT ACCELERATION</b>	<b>225 Gs to 275 Gs</b>		<b>259.8</b>
<b>PEAK LATERAL ACCELERATION</b>	<b>15 Gs Maximum</b>		<b>1.7</b>
<b>IS ACCELERATION CURVE UNIMODAL?</b>	<b>YES</b>		<b>YES</b>

**HEAD ACCELEROMETER CALIBRATION INFORMATION**

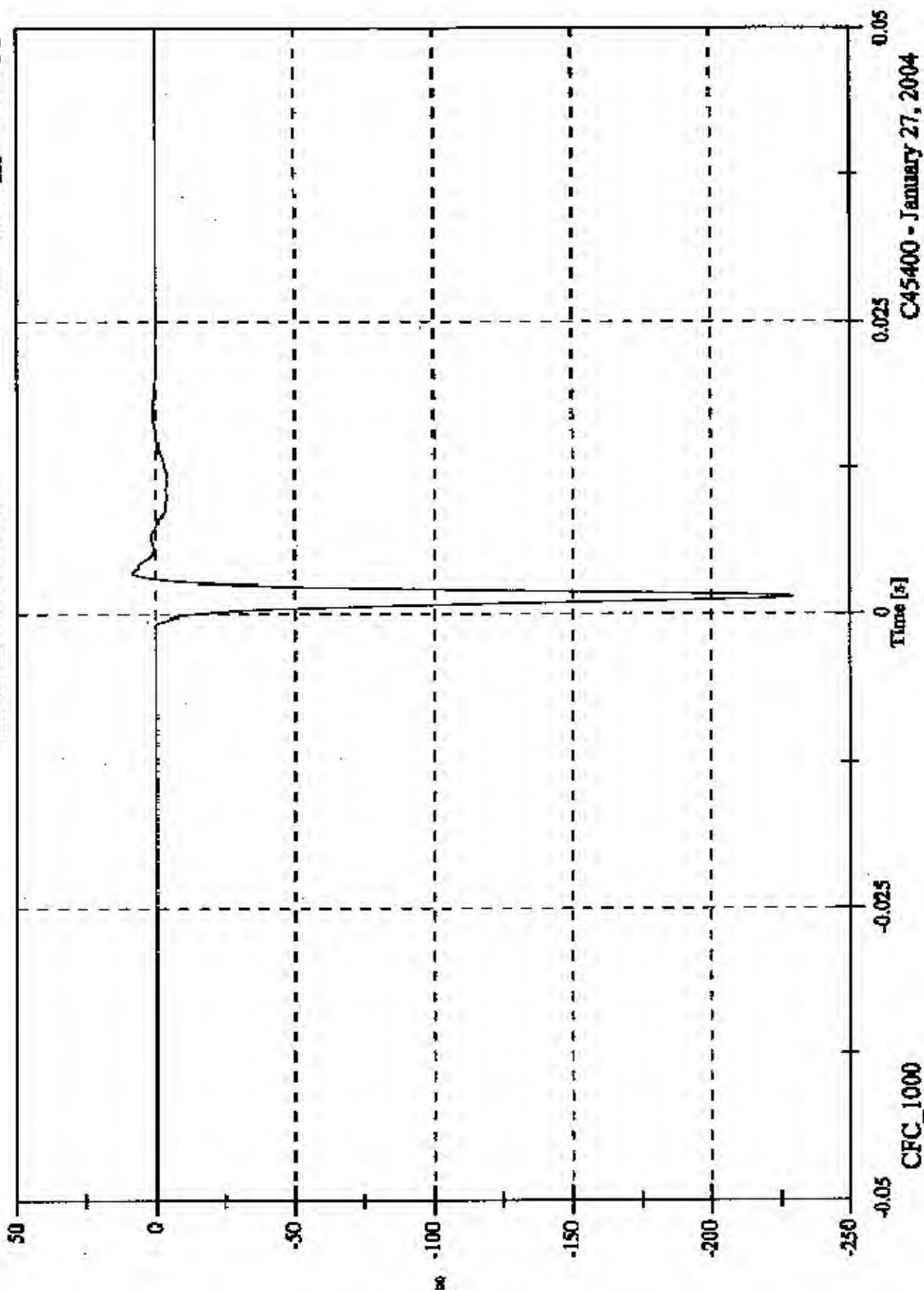
<b>I.D. NUMBER</b>	<b>MANUFACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DATE OF LAST CALIBRATION</b>	<b>DATE OF NEXT CALIBRATION</b>
<b>1 - LONGITUDINAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J24876</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>1 - LATERAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J33030</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>3 - VERTICAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J31009</b>	<b>08/22/03</b>	<b>02/23/04</b>

**REMARKS:**

# FMVSS 201U - Headform Calibration Drops

Max: 8.7 [g] at 0.004 [s]  
Min: -229.4 [g] at 0.002 [s]

Headform X Acceleration

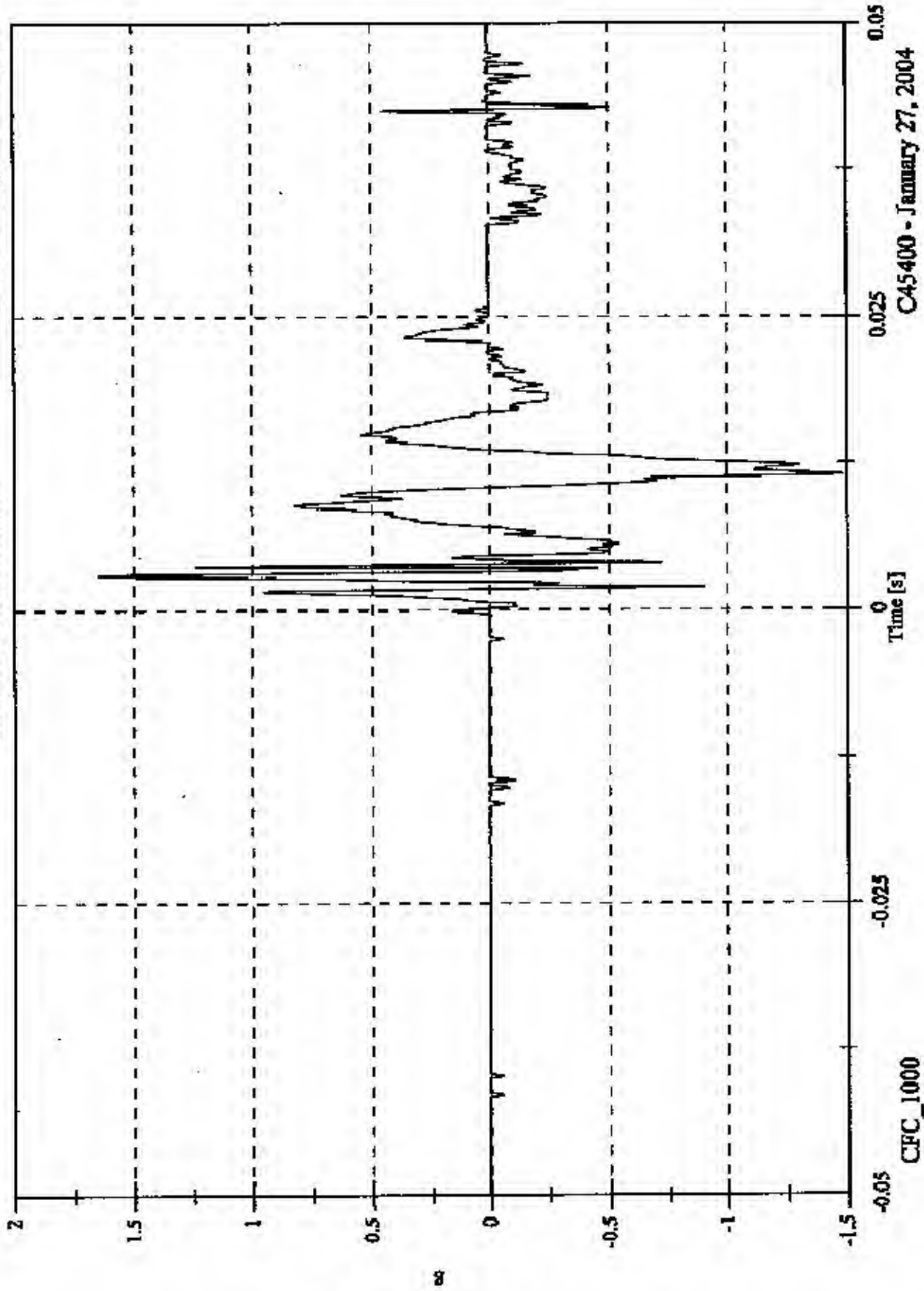


C45400 - January 27, 2004

# FMVSS 201U - Headform Calibration Drops

Max: 1.7 [g] at 0.003 [s]  
Min: -1.5 [g] at 0.011 [s]

Headform Y Acceleration



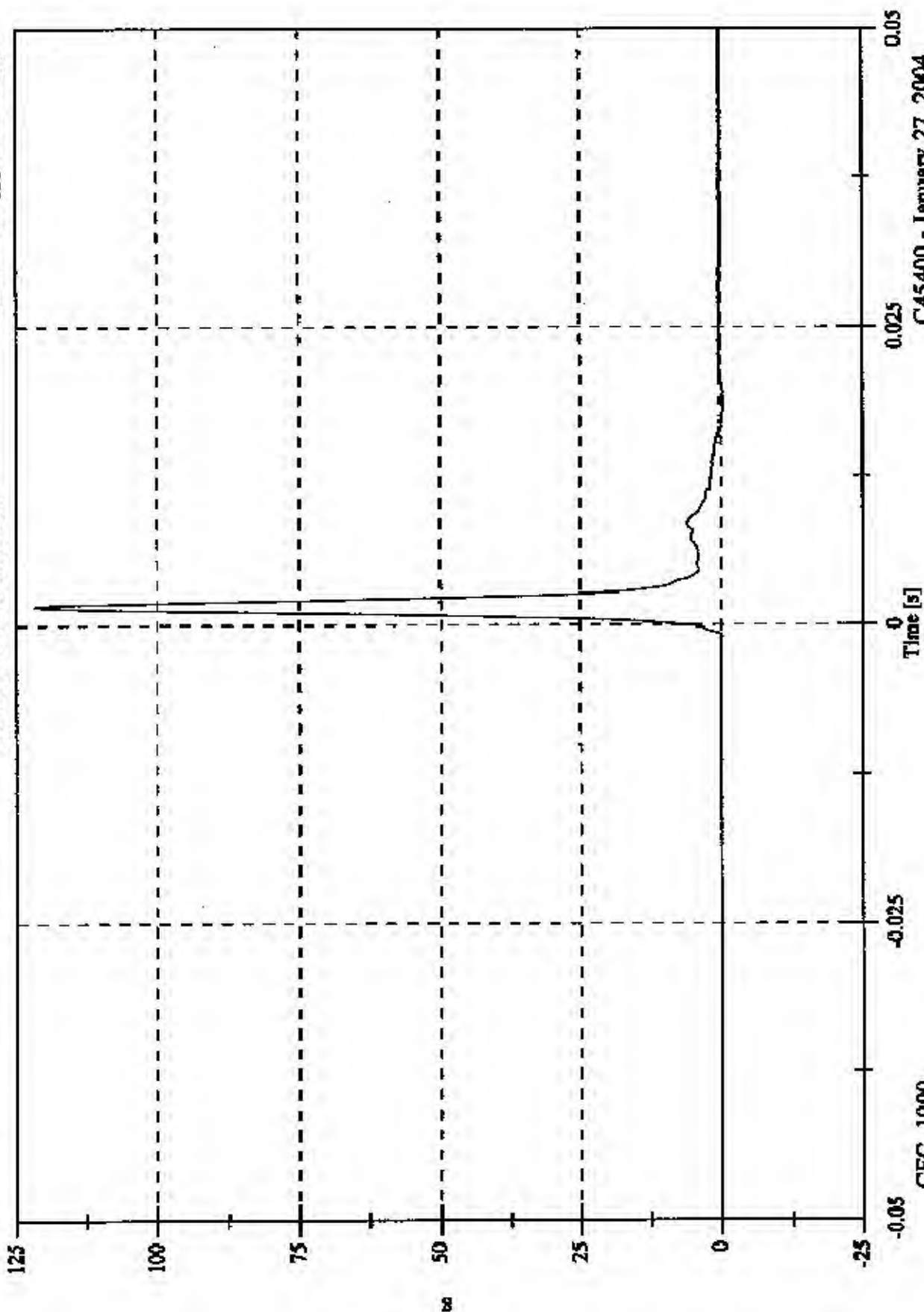
0.025 0.05  
C45400 - January 27, 2004



# FMVSS 201U - Headform Calibration Drops

Max: 121.9 [g] at 0.002 [s]  
Min: -0.4 [g] at 0.018 [s]

Headform Z Acceleration

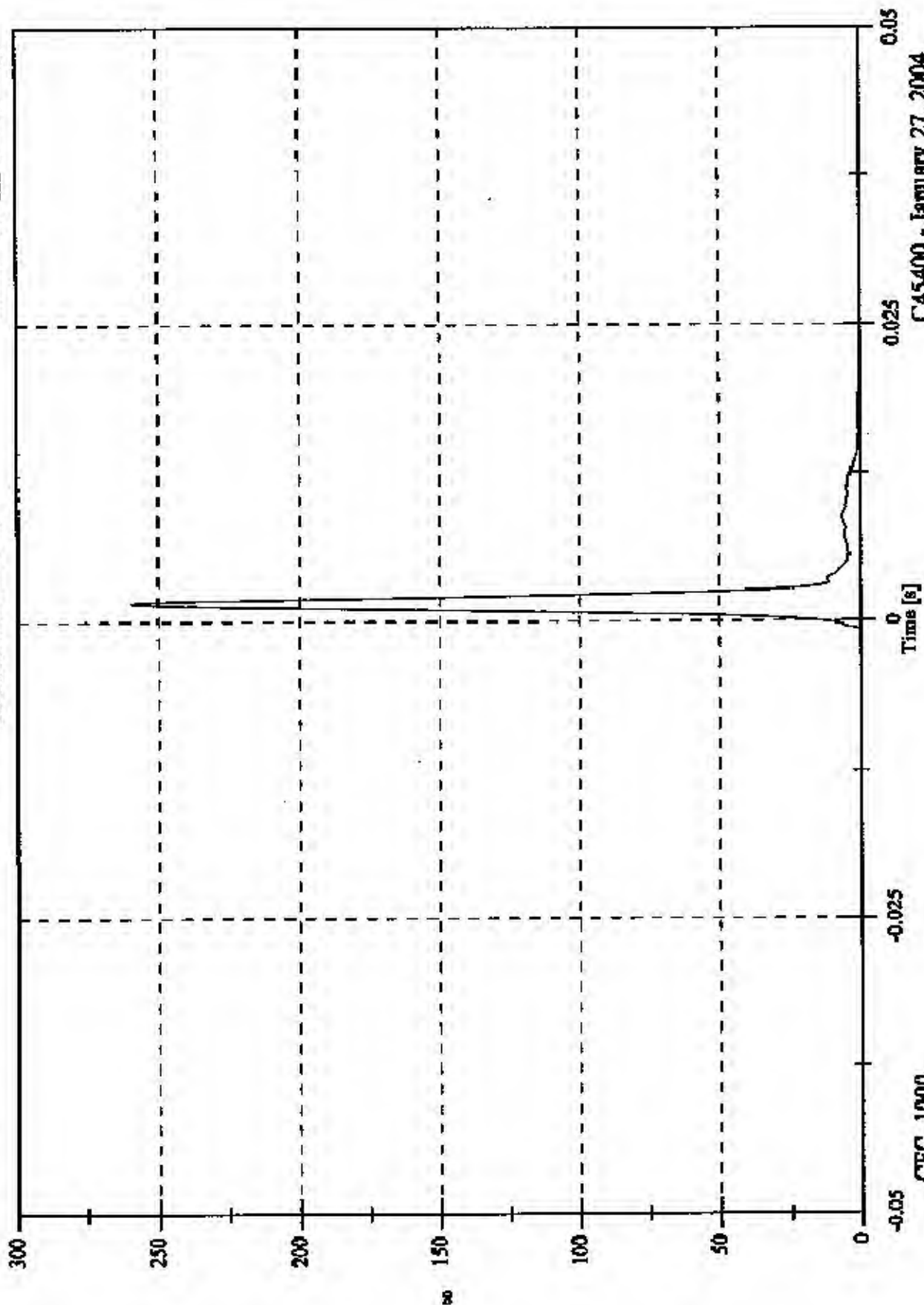


C45400 - January 27, 2004

# FMVSS 201U - Headform Calibration Drops

Max: 259.8 [g] at 0.002 [s]  
Min: 0.0 [g] at -0.014 [s]

Headform Resultant



**PART 572L  
HEAD DROP PRE-TEST**

<b>MANUFACTURER:</b>		<b>FIRST TECHNOLOGY SAFETY SYSTEMS</b>	
<b>SERIAL NUMBER:</b>		<b>9062</b>	
<b>CALIBRATION DATE:</b>		<b>January 27, 2004</b>	
<b>TEST PARAMETER</b>	<b>SPECIFICATION</b>		<b>TEST RESULTS</b>
<b>TEMPERATURE</b>	<b>19°C to 26°C</b>		<b>21</b>
<b>RELATIVE HUMIDITY</b>	<b>10% to 70%</b>		<b>16</b>
<b>PEAK RESULTANT ACCELERATION</b>	<b>225 Gs to 275 Gs</b>		<b>238.4</b>
<b>PEAK LATERAL ACCELERATION</b>	<b>15 Gs Maximum</b>		<b>8.0</b>
<b>IS ACCELERATION CURVE UNIMODAL?</b>	<b>YES</b>		<b>YES</b>

**HEAD ACCELEROMETER CALIBRATION INFORMATION**

<b>ID NUMBER</b>	<b>MANUFACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DATE OF LAST CALIBRATION</b>	<b>DATE OF NEXT CALIBRATION</b>
<b>1 - LONGITUDINAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J33127</b>	<b>08/12/03</b>	<b>02/23/04</b>
<b>2 - LATERAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J33019</b>	<b>08/12/03</b>	<b>02/23/04</b>
<b>3 - VERTICAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J31782</b>	<b>08/12/03</b>	<b>02/23/04</b>

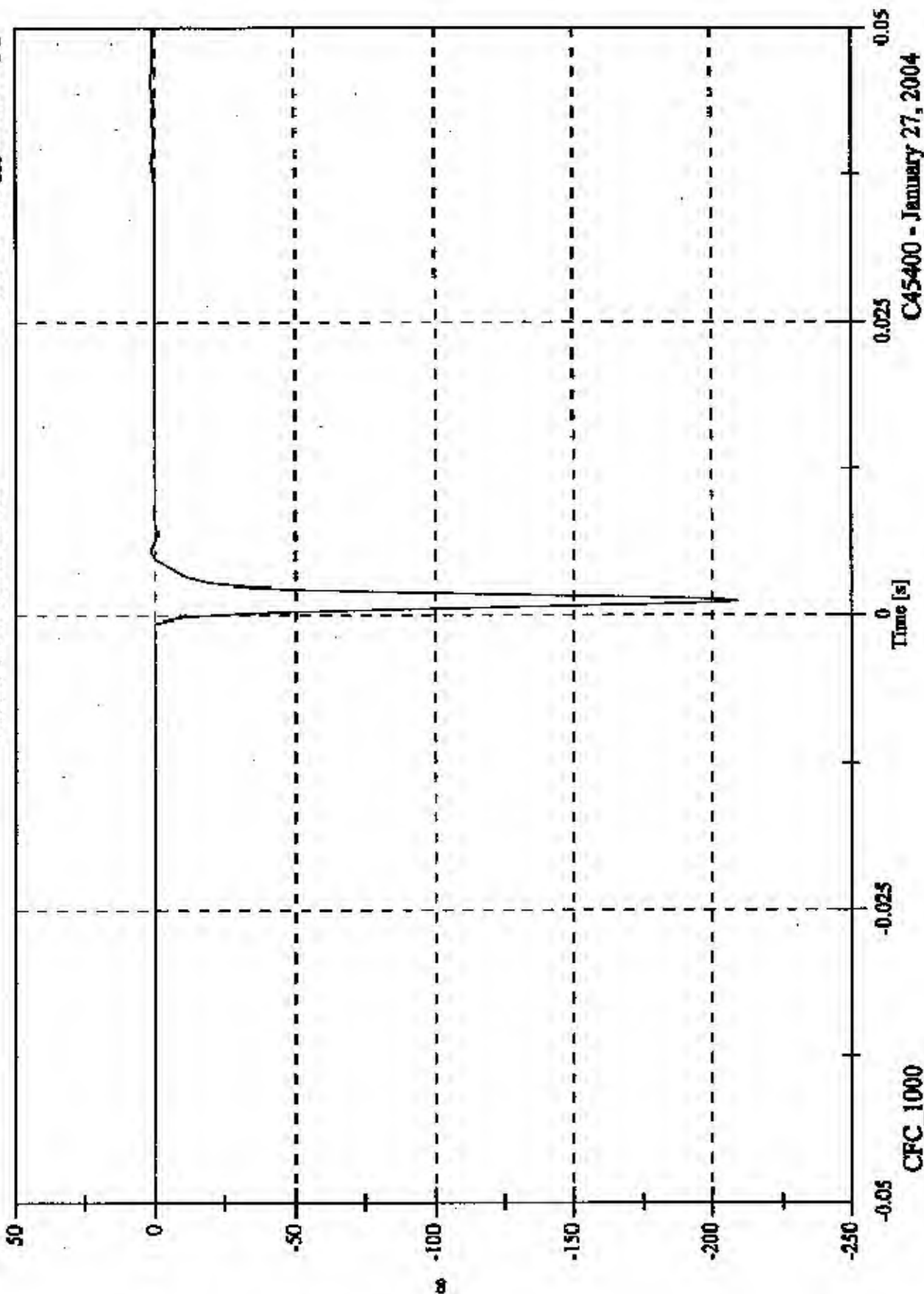
**REMARKS:**



# FMVSS 201U - Headform Calibration Drops

Max: 1.7 [g] at 0.006 [s]  
Min: -209.6 [g] at 0.001 [s]

Headform X Acceleration

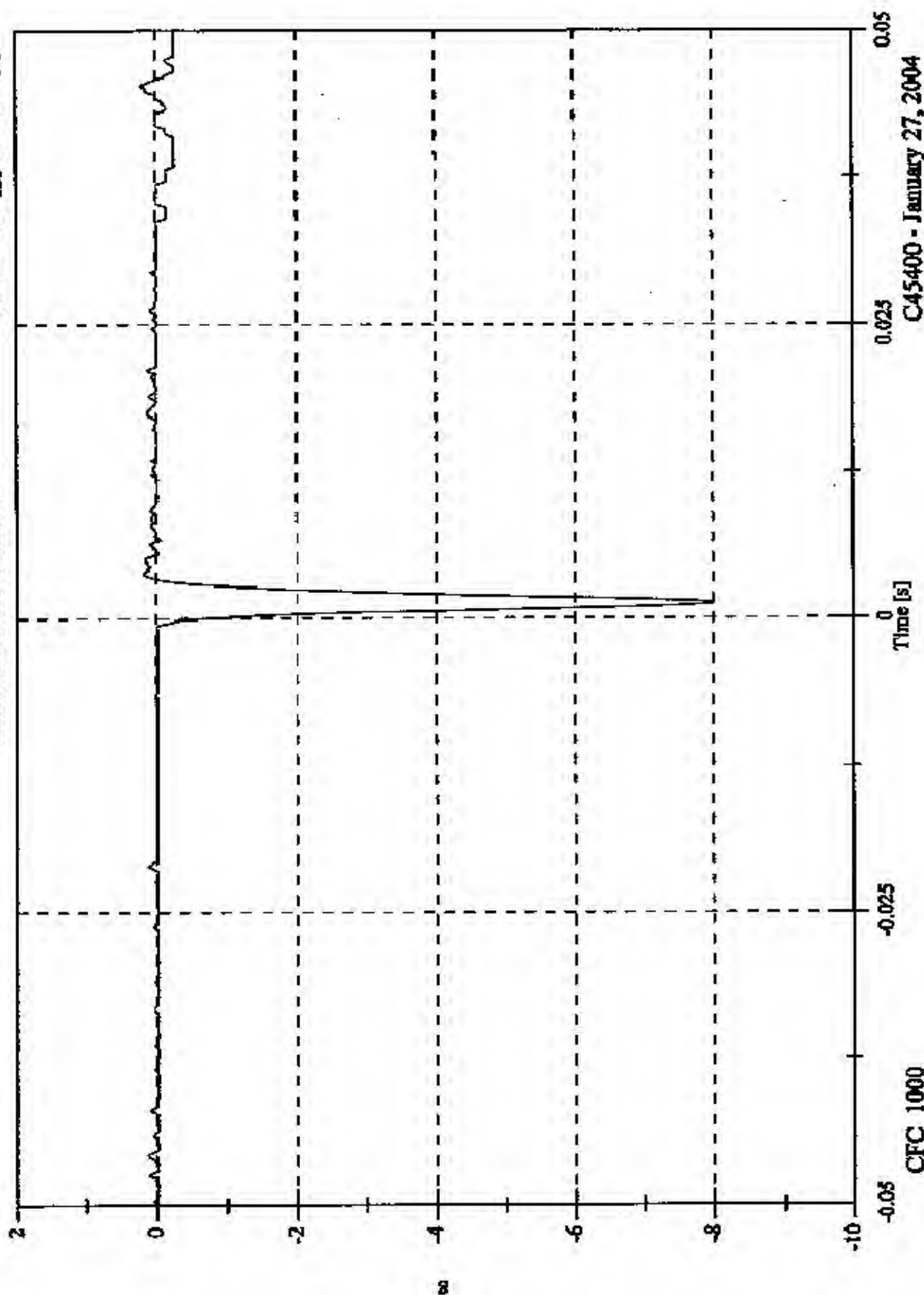


C45400 - January 27, 2004

EMVSS 201U - Headform Calibration Drops

Headform Y Acceleration

Max: 0.2 [g] at 0.045 [s]  
Min: -8.0 [g] at 0.001 [s]

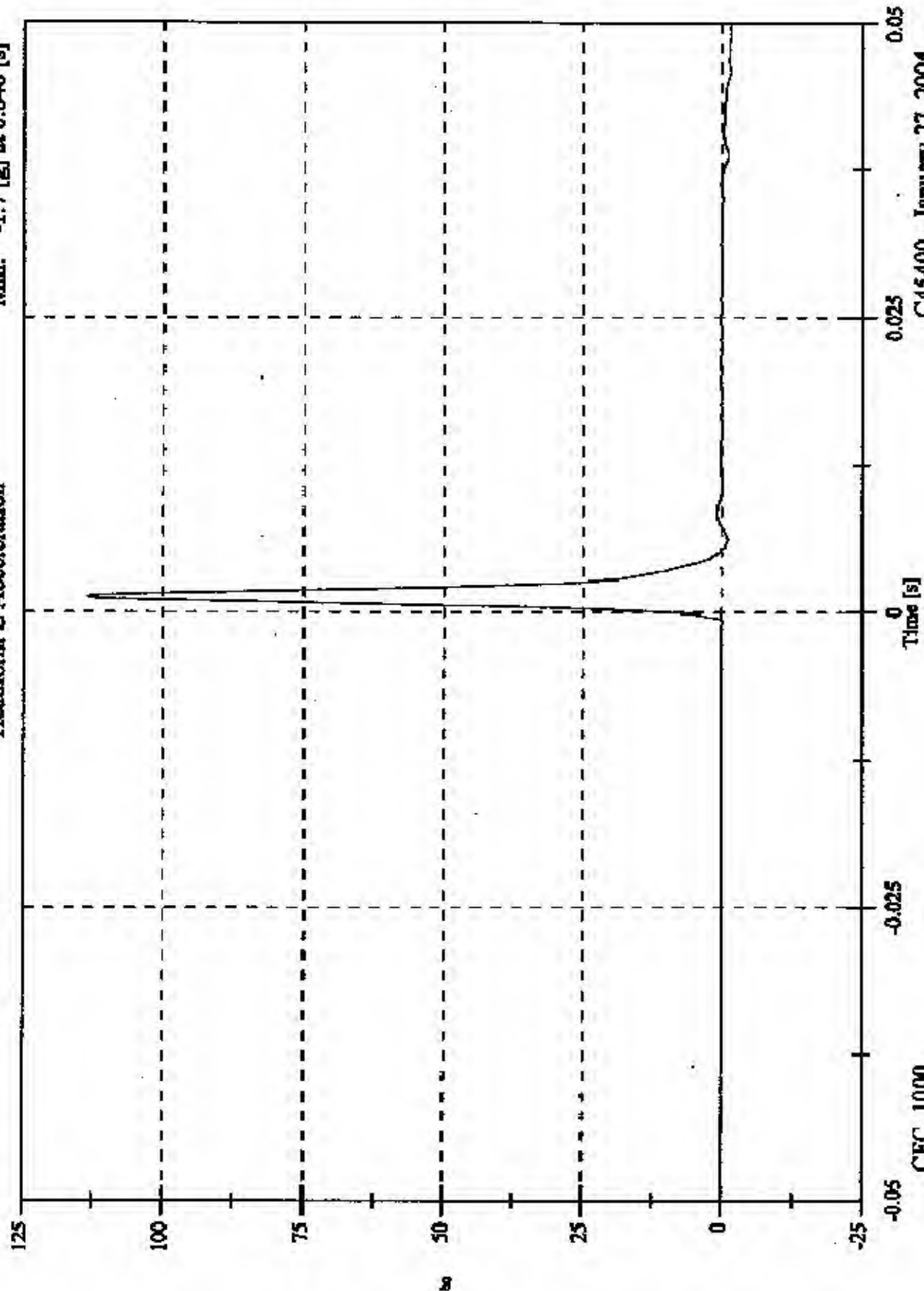


C45400 - January 27, 2004

# FMVSS 201U - Headform Calibration Drops

Max: 113.5 [g] at 0.001 [s]  
Min: -1.7 [g] at 0.046 [s]

Headform Z Acceleration



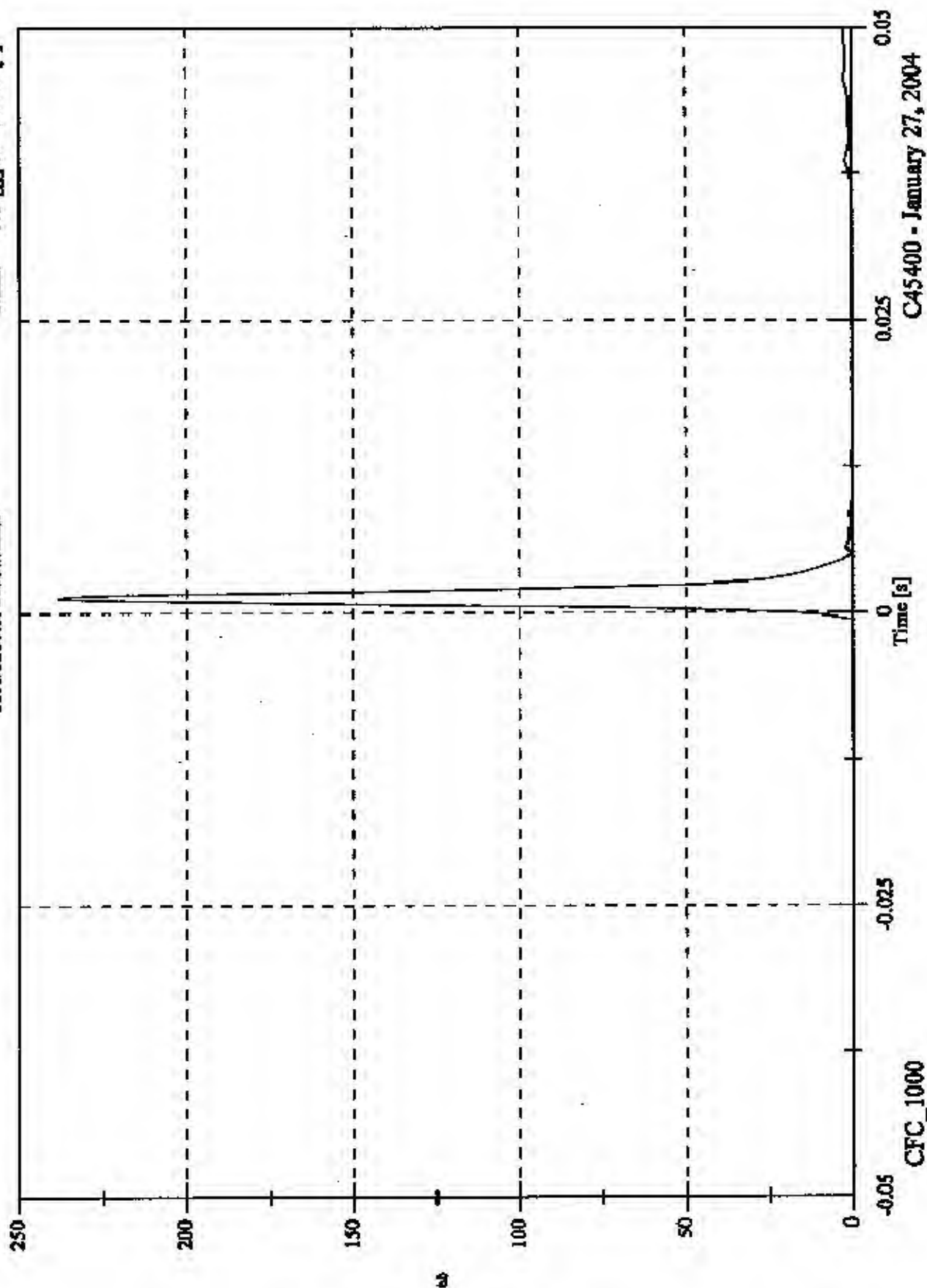
C45400 - January 27, 2004



# FMVSS 201U - Headform Calibration Drops

Max: 238.4 [g] at 0.001 [s]  
Min: 0.0 [g] at -0.050 [s]

Headform Resultant



C45400 - January 27, 2004

**PART 572L  
HEAD DROP PRE-TEST**

<b>MANUFACTURER:</b>		<b>FIRST TECHNOLOGY SAFETY SYSTEMS</b>
<b>SERIAL NUMBER:</b>		<b>885</b>
<b>CALIBRATION DATE:</b>		<b>January 27, 2004</b>
<b>TEST PARAMETER</b>	<b>SPECIFICATION</b>	<b>TEST RESULTS</b>
<b>TEMPERATURE</b>	<b>19°C to 26°C</b>	<b>21</b>
<b>RELATIVE HUMIDITY</b>	<b>10% to 70%</b>	<b>16</b>
<b>PEAK RESULTANT ACCELERATION</b>	<b>225 Gs to 275 Gs</b>	<b>242.8</b>
<b>PEAK LATERAL ACCELERATION</b>	<b>15 Gs Maximum</b>	<b>1.7</b>
<b>IS ACCELERATION CURVE UNIMODAL?</b>	<b>YES</b>	<b>YES</b>

**HEAD ACCELEROMETER CALIBRATION INFORMATION**

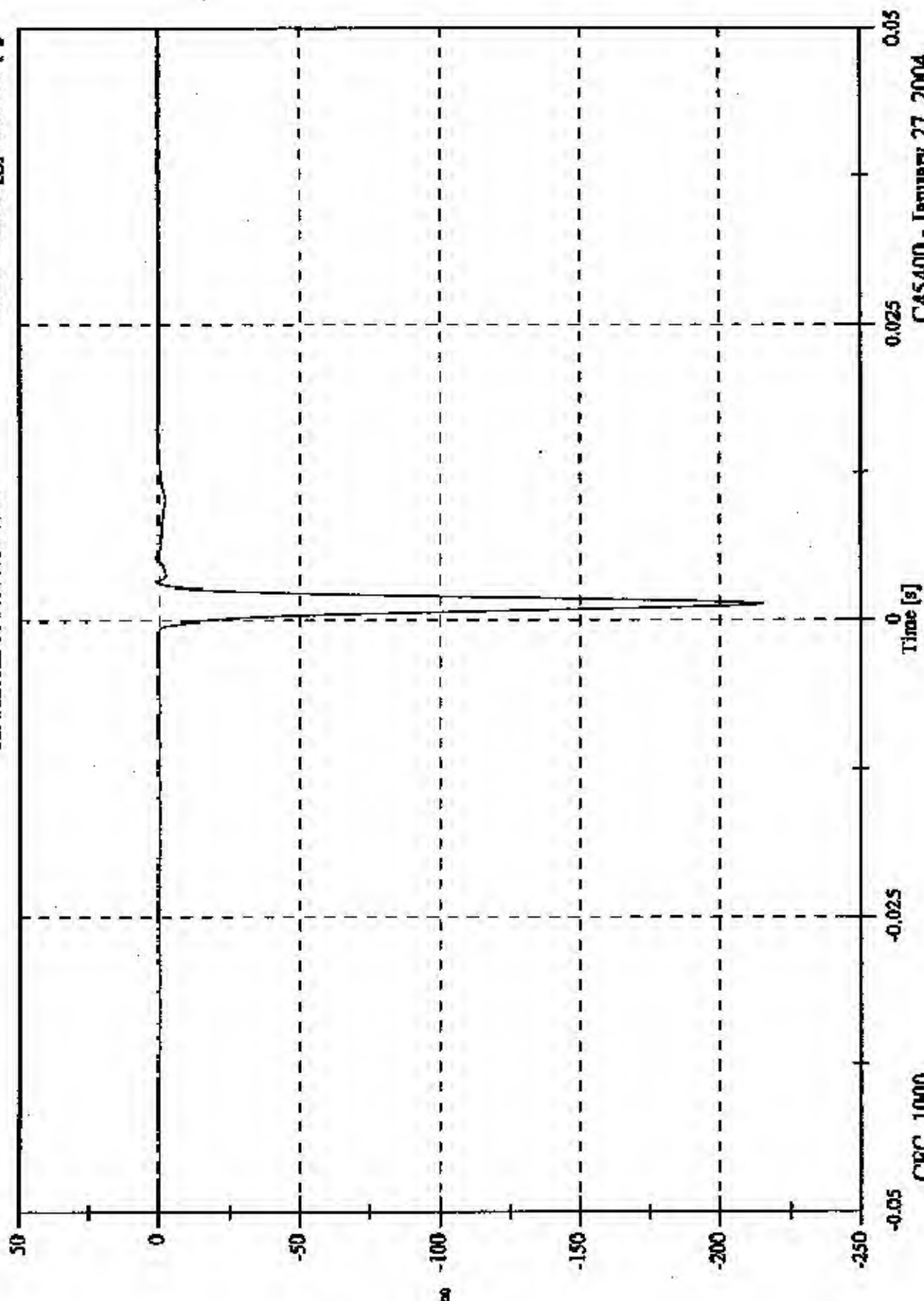
<b>ID NUMBER</b>	<b>MANUFACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DATE OF LAST CALIBRATION</b>	<b>DATE OF NEXT CALIBRATION</b>
<b>1 - LONGITUDINAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J38127</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>1 - LATERAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J37980</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>3 - VERTICAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J37854</b>	<b>08/22/03</b>	<b>02/23/04</b>

**REMARKS:**

# FMVSS 201U - Headform Calibration Drops

Max: 0.8 [g] at 0.003 [s]  
Min: -215.1 [g] at 0.001 [s]

Headform X Acceleration



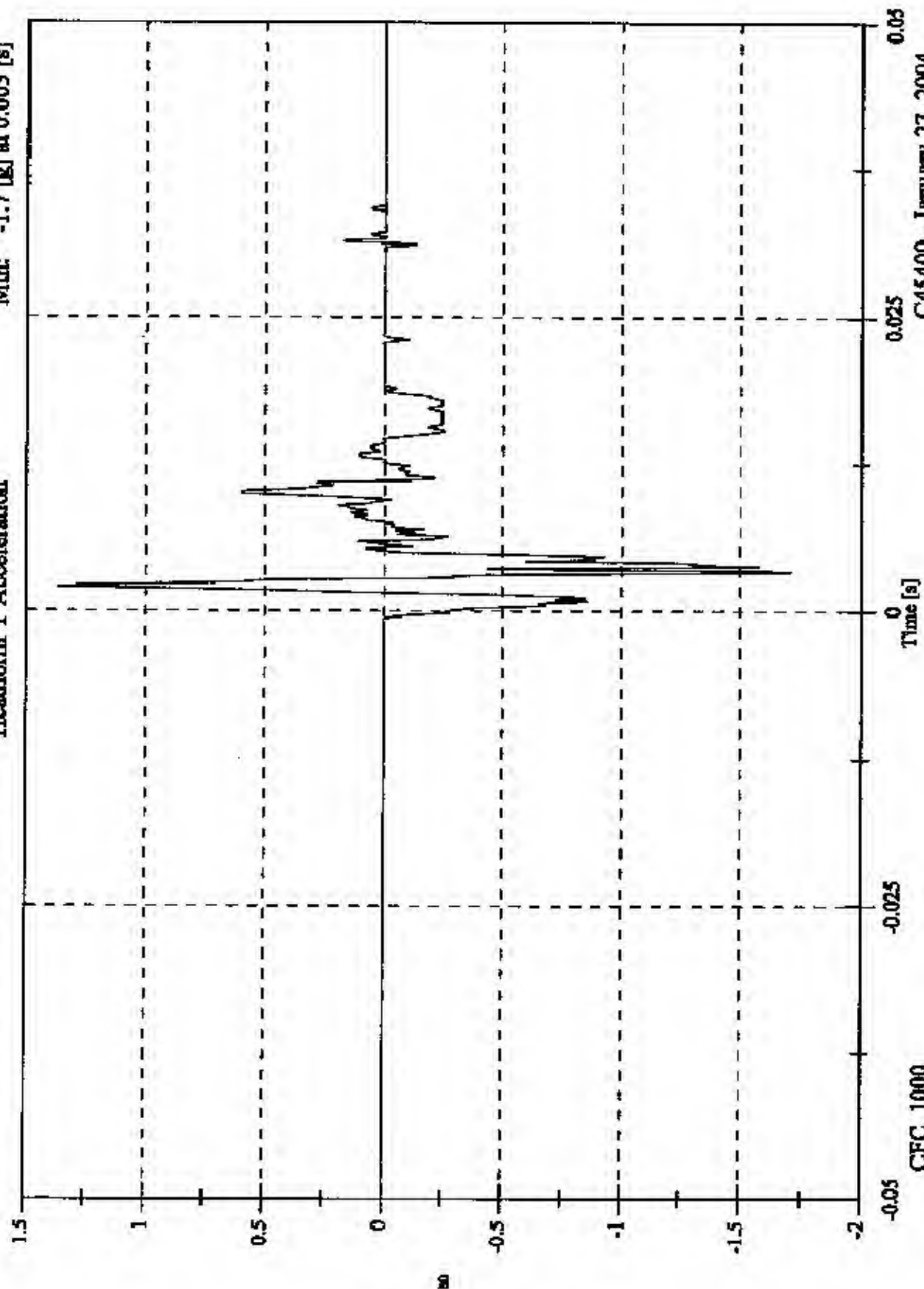
C45400 - January 27, 2004



# FMVSS 201U - Headform Calibration Drops

Max: 1.4 [g] at 0.002 [s]  
Min: -1.7 [g] at 0.003 [s]

Headform Y Acceleration

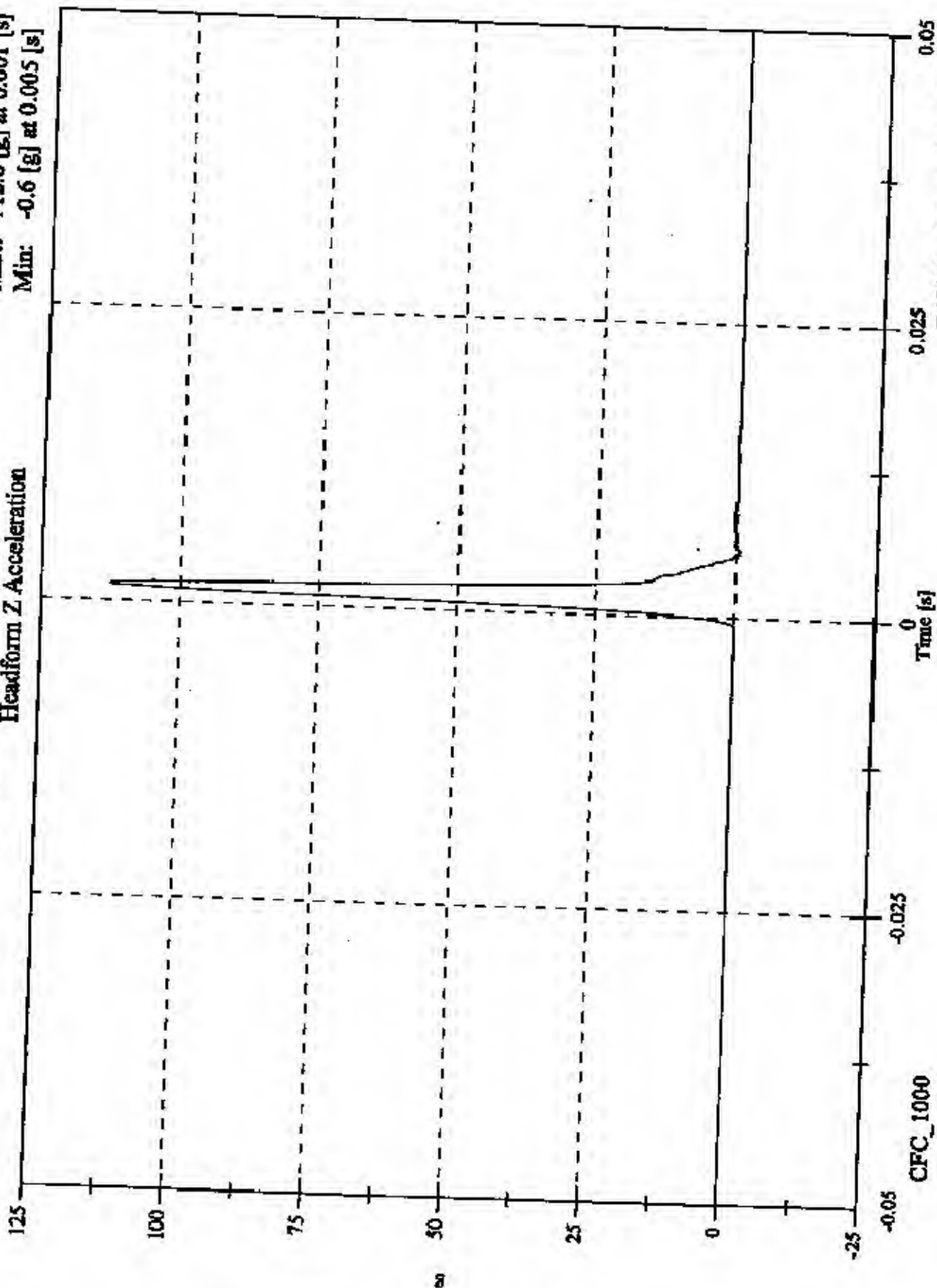


C45400 - January 27, 2004

# FMVSS 201U - Headform Calibration Drops

Max: 112.6 [g] at 0.001 [s]  
Min: -0.6 [g] at 0.005 [s]

Headform Z Acceleration

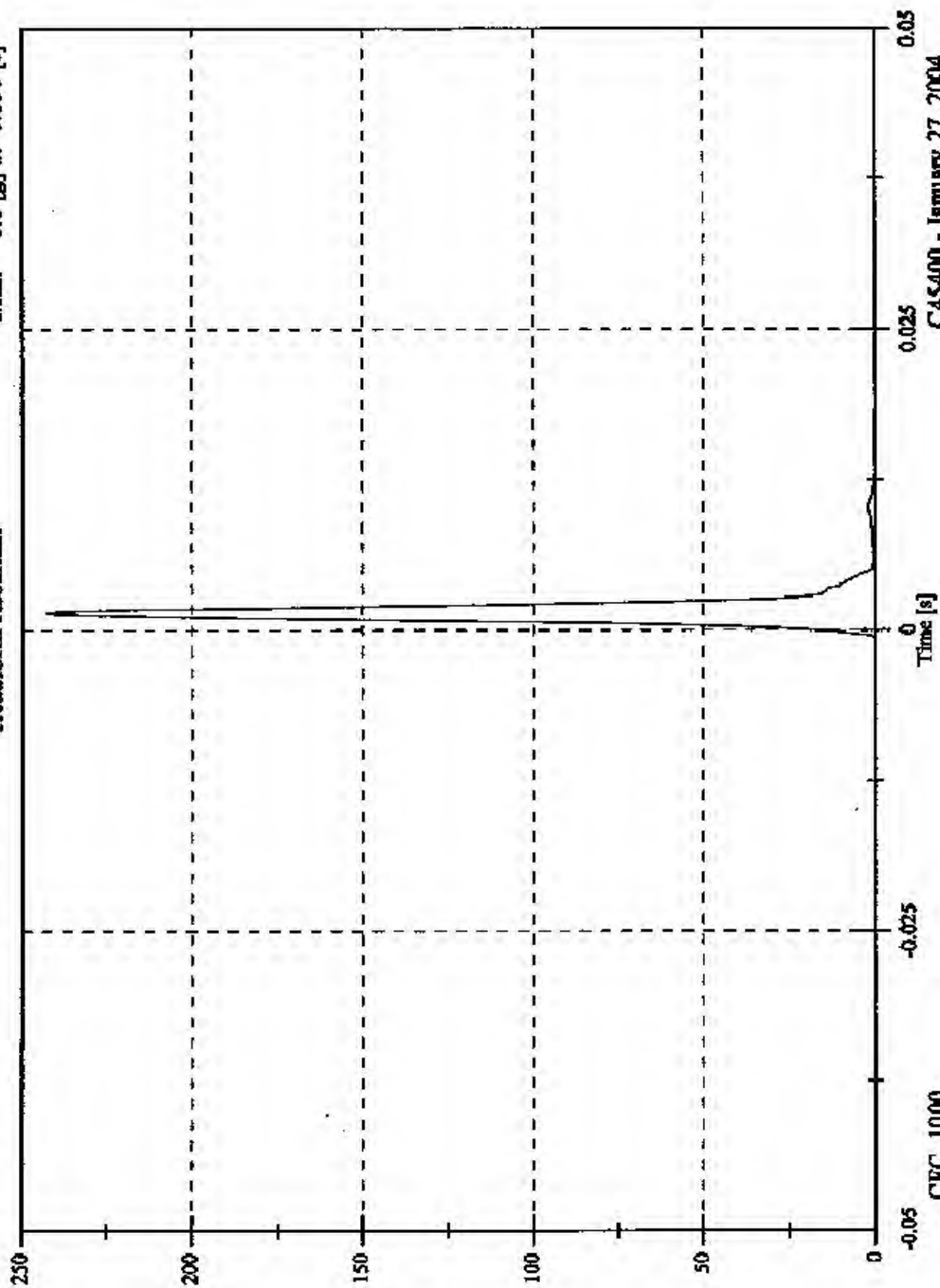


C45400 - January 27, 2004

# FMVSS 201U - Headform Calibration Drops

Max: 242.8 [g] at 0.001 [s]  
Min: 0.0 [g] at -0.050 [s]

Headform Resultant



C45400 - January 27, 2004



**PART 572L  
HEAD DROP PRE-TEST**

<b>MANUFACTURER:</b>		<b>FIRST TECHNOLOGY SAFETY SYSTEMS</b>
<b>SERIAL NUMBER:</b>		<b>0355</b>
<b>CALIBRATION DATE:</b>		<b>January 27, 2004</b>
<b>TEST PARAMETER</b>	<b>SPECIFICATION</b>	<b>TEST RESULTS</b>
<b>TEMPERATURE</b>	<b>15°C to 26°C</b>	<b>21</b>
<b>RELATIVE HUMIDITY</b>	<b>10% to 70%</b>	<b>16</b>
<b>PEAK RESULTANT ACCELERATION</b>	<b>225 Gs to 275 Gs</b>	<b>249.3</b>
<b>PEAK LATERAL ACCELERATION</b>	<b>15 Gs Maximum</b>	<b>13.3</b>
<b>IS ACCELERATION CURVE UNIMODAL?</b>	<b>YES</b>	<b>YES</b>

**HEAD ACCELEROMETER CALIBRATION INFORMATION**

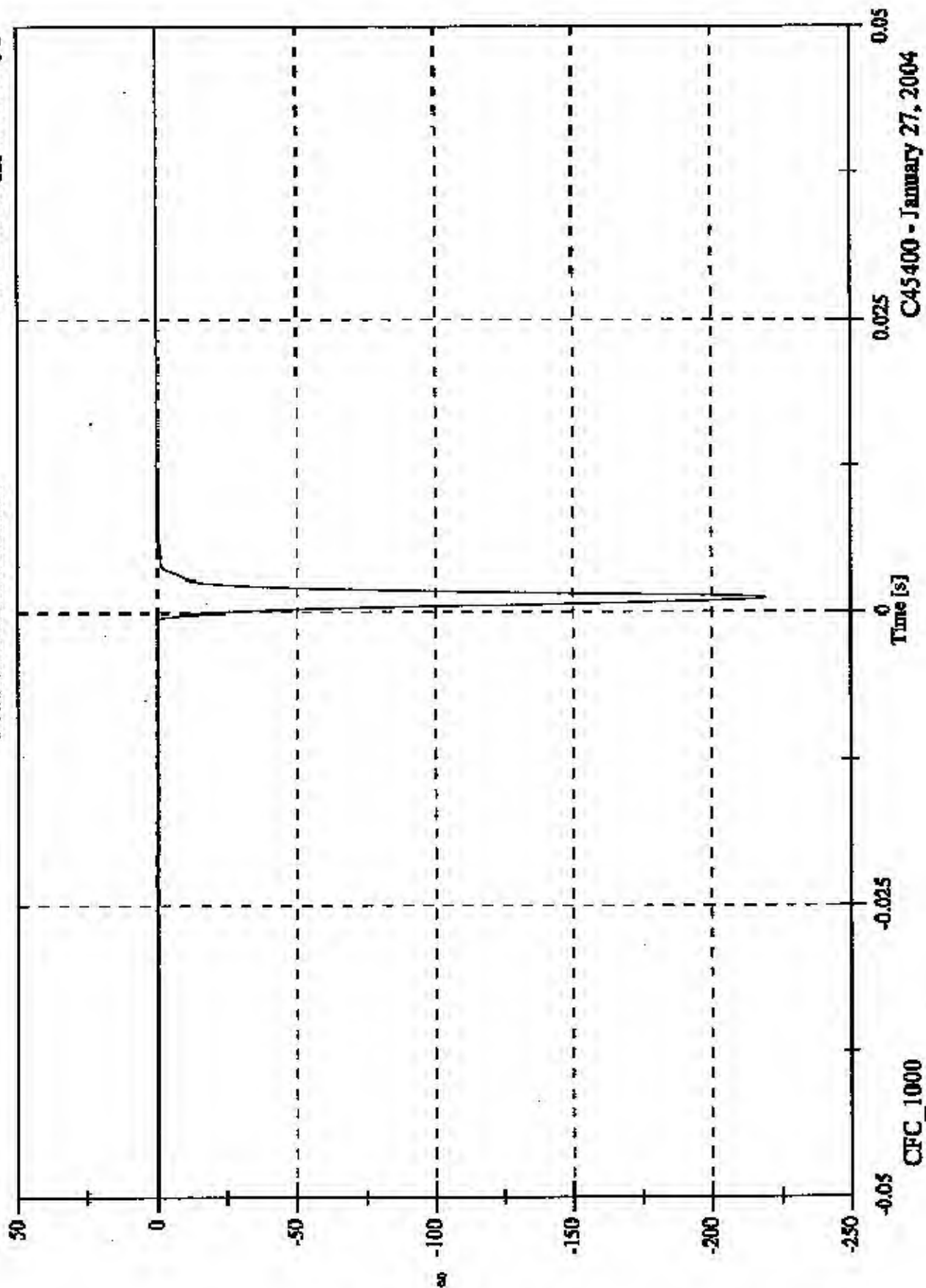
<b>ID NUMBER</b>	<b>MANUFACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DATE OF LAST CALIBRATION</b>	<b>DATE OF NEXT CALIBRATION</b>
<b>1 - LONGITUDINAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J28671</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>2 - LATERAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J31779</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>3 - VERTICAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J25854</b>	<b>08/22/03</b>	<b>02/23/04</b>

**REMARKS:**

FMVSS 201U - Headform Calibration Drops

Max: 0.2 [g] at -0.050 [s]  
Min: -219.5 [g] at 0.001 [s]

Headform X Acceleration

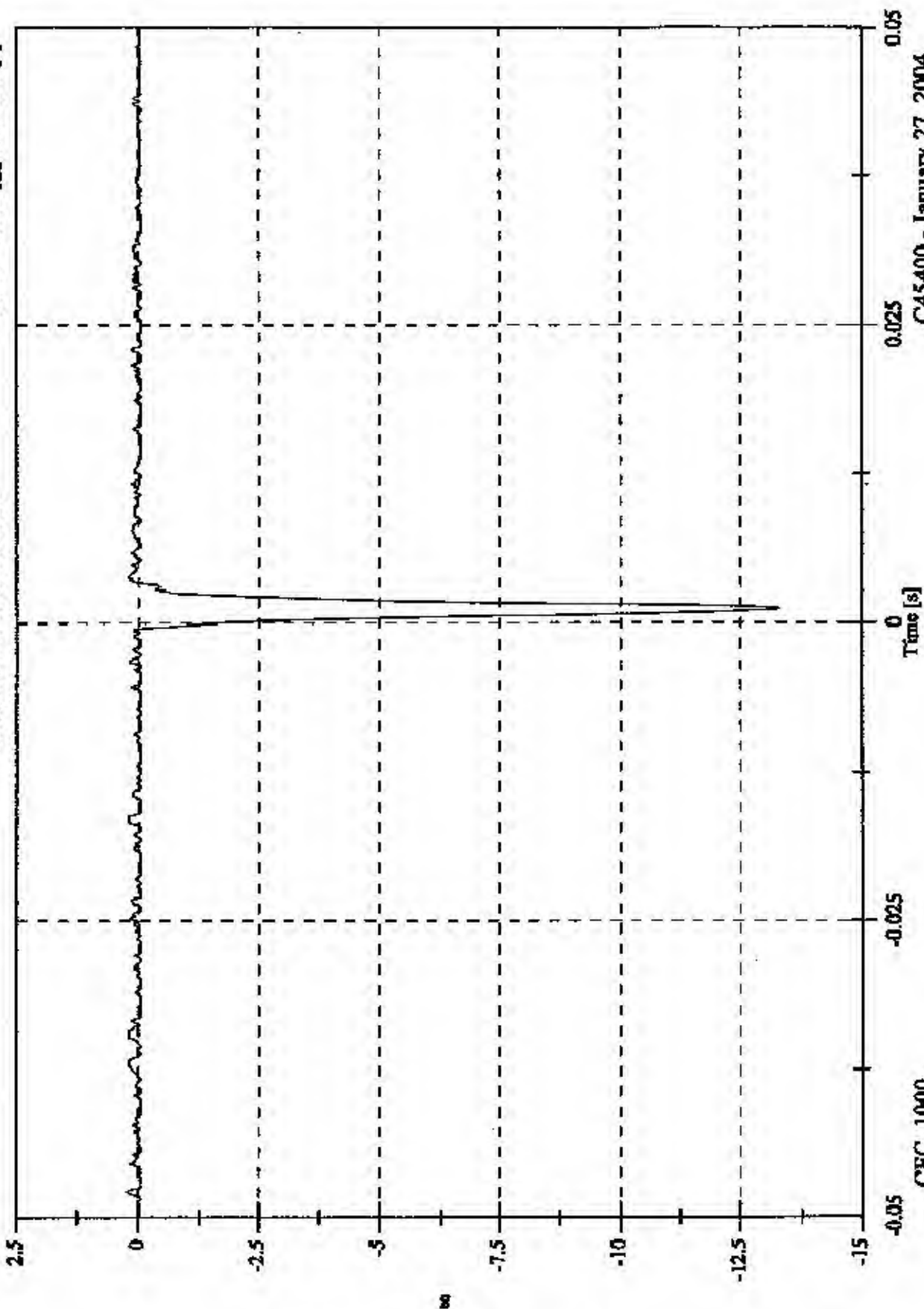


C45400 - January 27, 2004

EMVSS 201U - Headform Calibration Drops

Max: 0.2 [g] at 0.004 [s]  
Min: -13.3 [g] at 0.001 [s]

Headform Y Acceleration



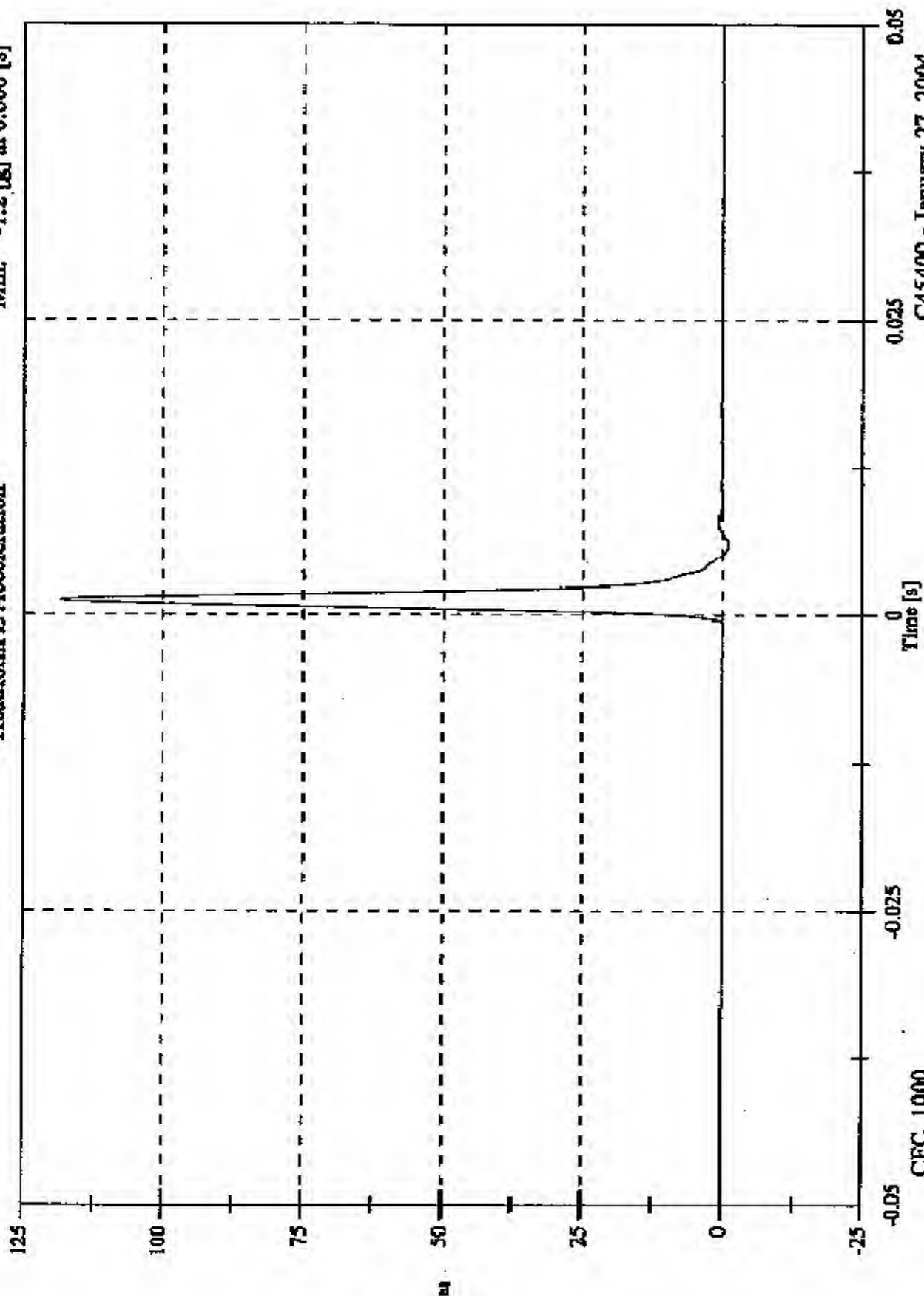
CFC\_1000



# FMVSS 201U - Headform Calibration Drops

Max: 118.5 [g] at 0.001 [s]  
Min: -1.2 [g] at 0.006 [s]

Headform Z Acceleration

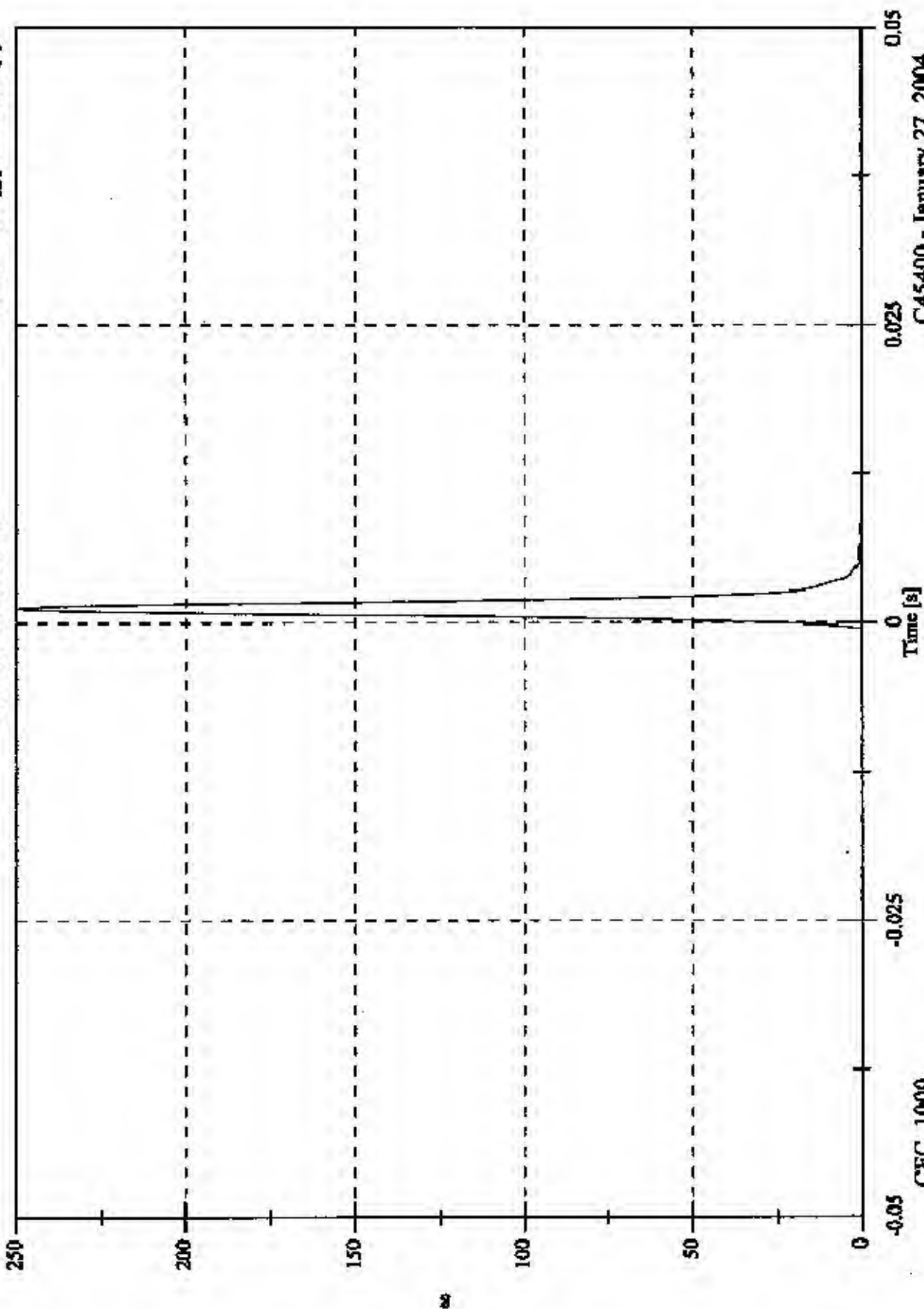


C45400 - January 27, 2004

EMVSS 201U - Headform Calibration Drops

Max: 249.3 [g] at 0.001 [s]  
Min: 0.0 [g] at -0.009 [s]

Headform Resultant



CFC\_1000

**PART 572L  
HEAD DROP PRE-TEST**

<b>MANUFACTURER:</b>		<b>FIRST TECHNOLOGY SAFETY SYSTEMS</b>
<b>SERIAL NUMBER:</b>		<b>1144</b>
<b>CALIBRATION DATE:</b>		<b>January 27, 2004</b>
<b>TEST PARAMETER</b>	<b>SPECIFICATION</b>	<b>TEST RESULTS</b>
<b>TEMPERATURE</b>	<b>19°C to 26°C</b>	<b>21</b>
<b>RELATIVE HUMIDITY</b>	<b>18% to 70%</b>	<b>16</b>
<b>PEAK RESULTANT ACCELERATION</b>	<b>225 Gs to 275 Gs</b>	<b>231.1</b>
<b>PEAK LATERAL ACCELERATION</b>	<b>15 Gs Maximum</b>	<b>7.9</b>
<b>IS ACCELERATION CURVE UNIMODAL?</b>	<b>YES</b>	<b>YES</b>

**HEAD ACCELEROMETER CALIBRATION INFORMATION**

<b>LD. NUMBER</b>	<b>MANUFACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DATE OF LAST CALIBRATION</b>	<b>DATE OF NEXT CALIBRATION</b>
<b>1 - LONGITUDINAL</b>	<b>ENDEVCO</b>	<b>7264-2800T</b>	<b>J41006</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>2 - LATERAL</b>	<b>ENDEVCO</b>	<b>7264-2800T</b>	<b>J40994</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>3 - VERTICAL</b>	<b>ENDEVCO</b>	<b>7264-2800T</b>	<b>J41007</b>	<b>08/22/03</b>	<b>02/23/04</b>

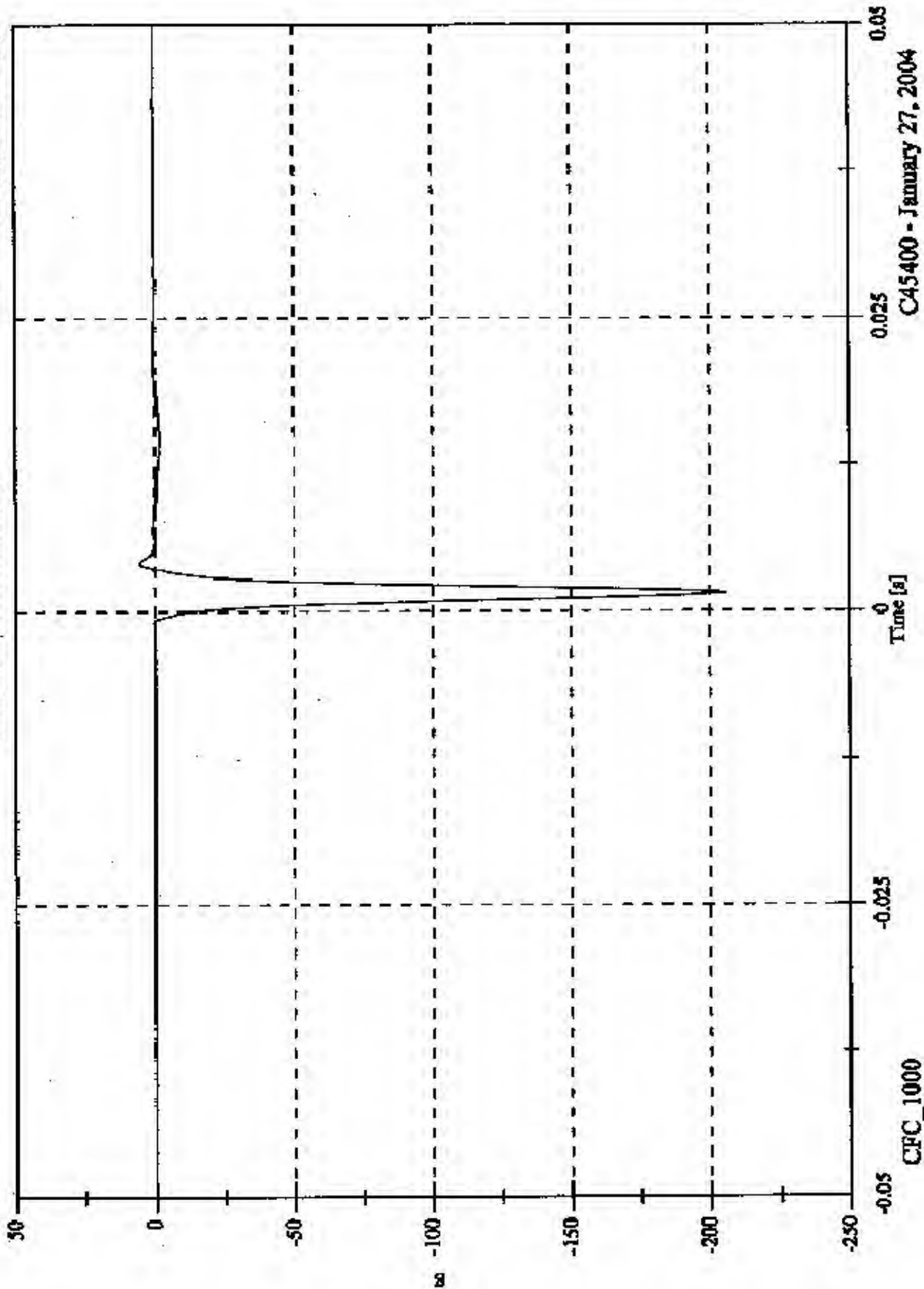
**REMARKS:**



# FMVSS 201U - Headform Calibration Drops

Max: 5.7 [g] at 0.004 [s]  
 Min: -205.8 [g] at 0.002 [s]

Headform X Acceleration

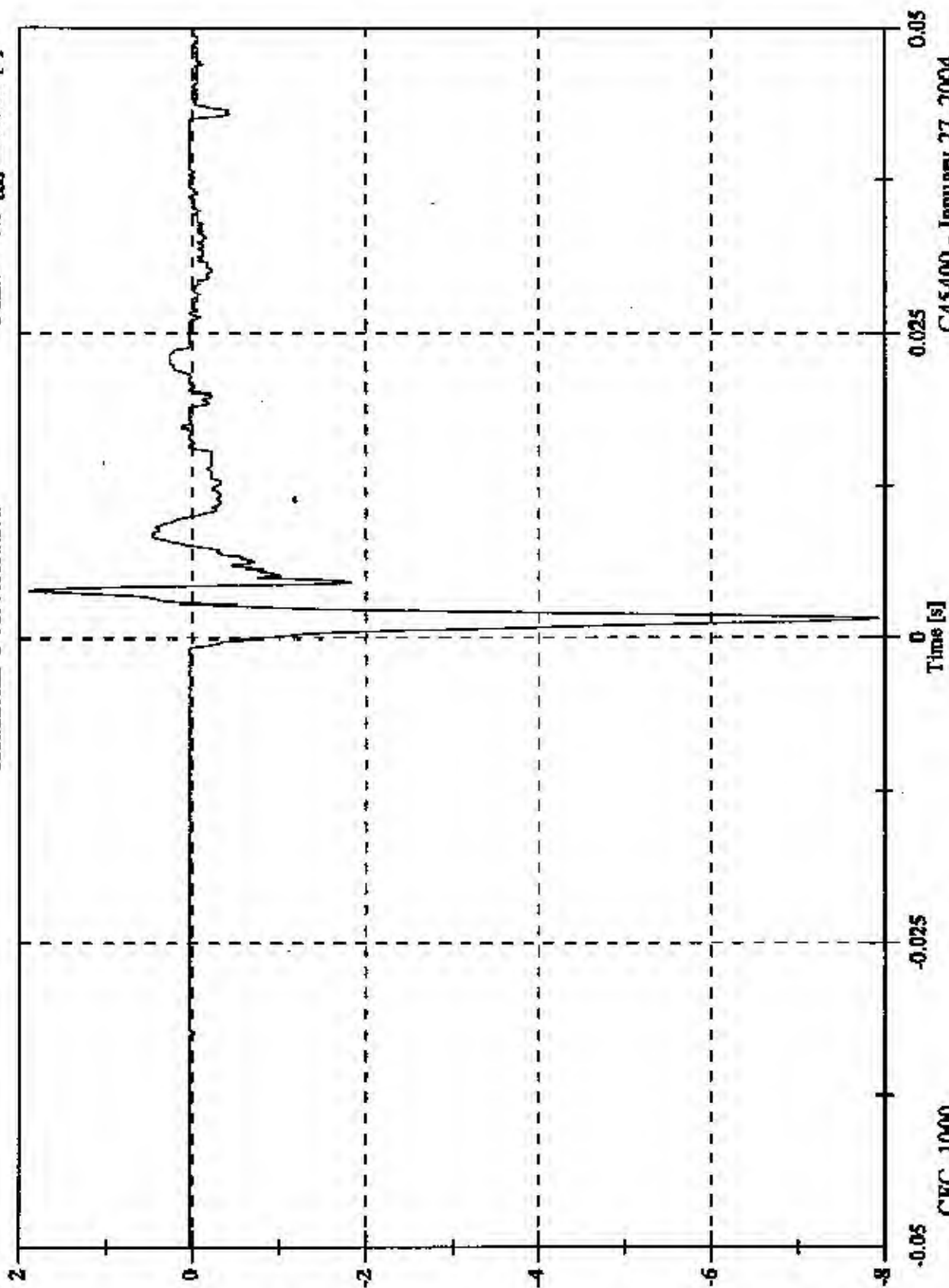


0.025 0.05  
 Time [s]  
 C45400 - January 27, 2004

EMVSS 201U - Headform Calibration Drops

Max: 1.9 [g] at 0.004 [s]  
Min: -7.9 [g] at 0.002 [s]

Headform Y Acceleration



CFC\_1000

Time [s]

0.025

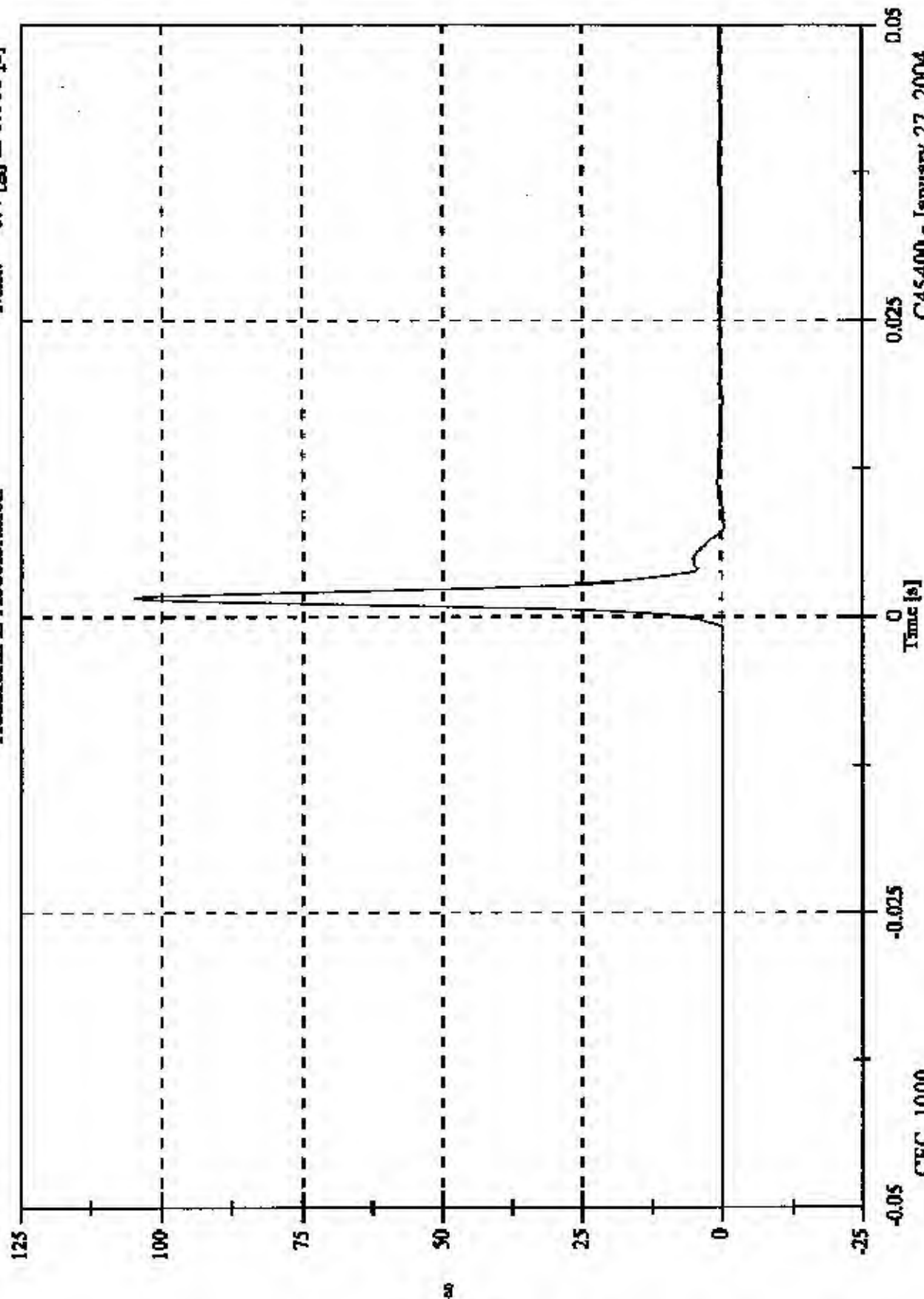
0.05

C45400 - January 27, 2004

# FMVSS 201U - Headform Calibration Drops

Max: 105.0 [g] at 0.002 [s]  
Min: -0.4 [g] at 0.008 [s]

Headform Z Acceleration



CFC\_1000

-0.025

0

0.025

0.05

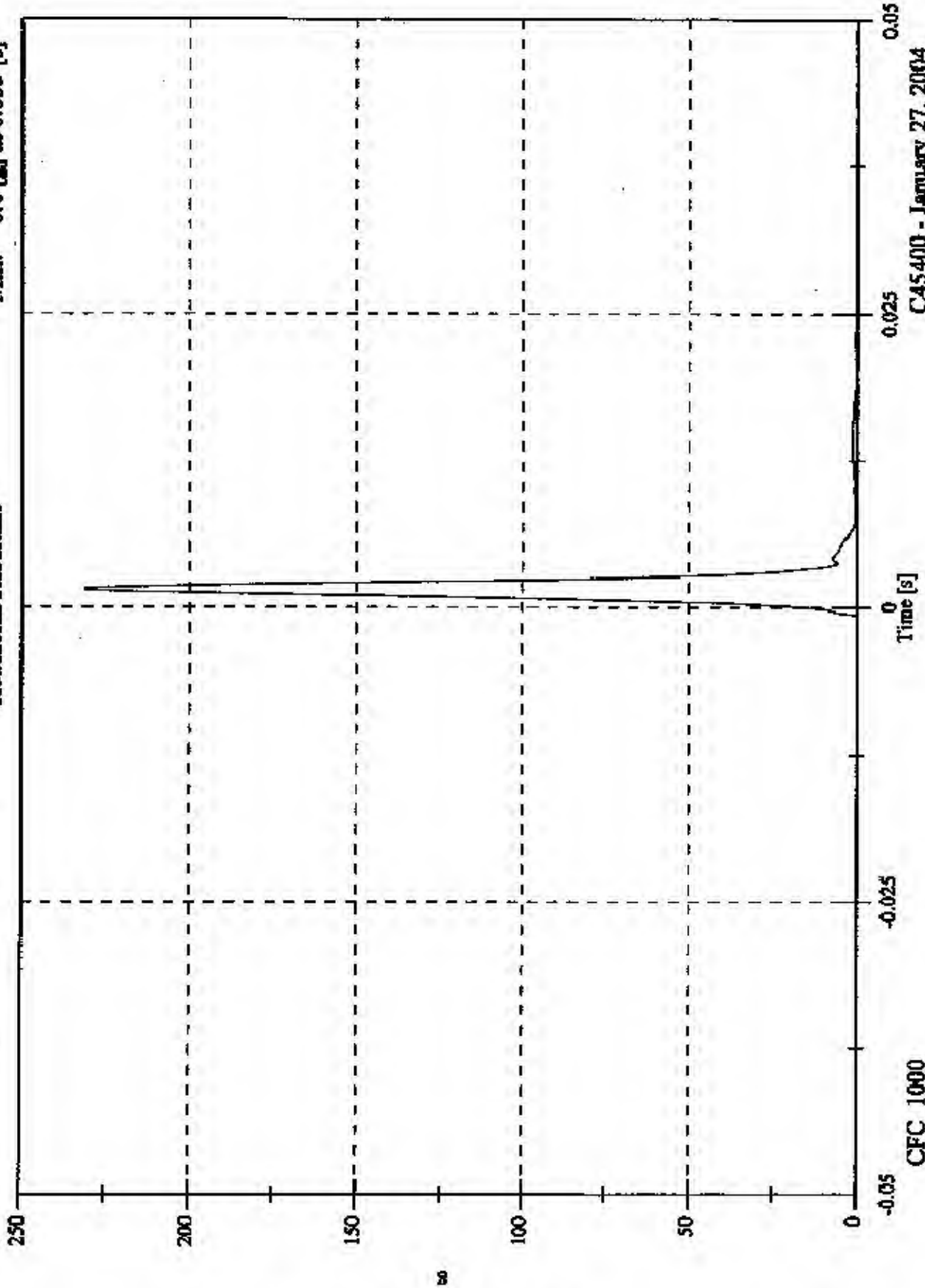
C45400 - January 27, 2004



# FMVSS 201U - Headform Calibration Drops

Headform Resultant

Max: 231.1 [g] at 0.002 [s]  
Min: 0.0 [g] at 0.035 [s]



C45400 - January 27, 2004

**PART 572L  
HEAD DROP POST-TEST**

<b>MANUFACTURER:</b>		<b>FIRST TECHNOLOGY SAFETY SYSTEMS</b>
<b>SERIAL NUMBER:</b>		<b>0642</b>
<b>CALIBRATION DATE:</b>		<b>February 4, 2004</b>
<b>TEST PARAMETER</b>	<b>SPECIFICATION</b>	<b>TEST RESULTS</b>
<b>TEMPERATURE</b>	<b>19°C to 26°C</b>	<b>23</b>
<b>RELATIVE HUMIDITY</b>	<b>10% to 70%</b>	<b>16</b>
<b>PEAK RESULTANT ACCELERATION</b>	<b>225 Gs to 275 Gs</b>	<b>269.1</b>
<b>PEAK LATERAL ACCELERATION</b>	<b>15 Gs Maximum</b>	<b>9.7</b>
<b>IS ACCELERATION CURVE UNIMODAL?</b>	<b>YES</b>	<b>YES</b>

**HEAD ACCELEROMETER CALIBRATION INFORMATION**

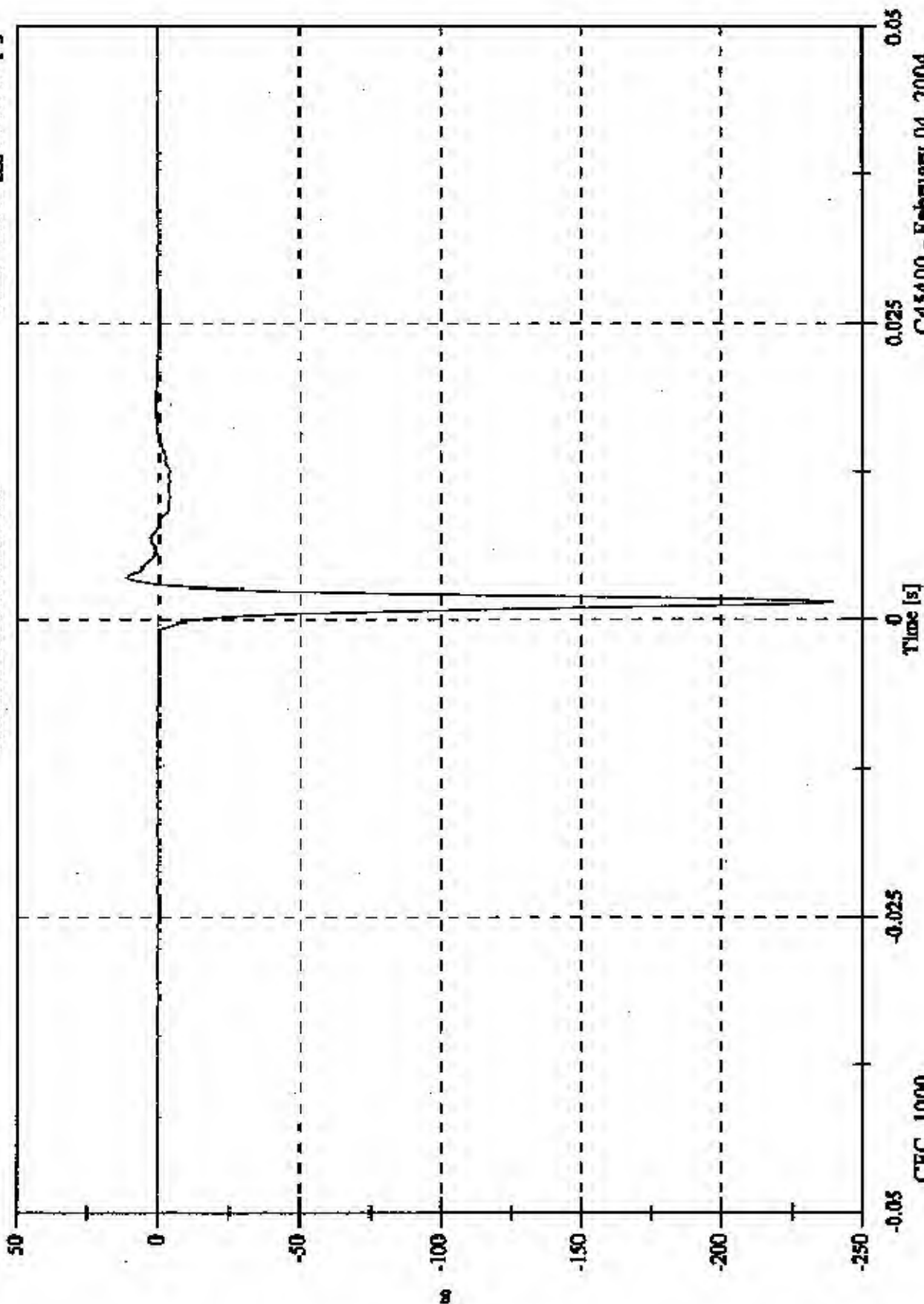
<b>ID NUMBER</b>	<b>MANUFACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DATE OF LAST CALIBRATION</b>	<b>DATE OF NEXT CALIBRATION</b>
<b>1 - LONGITUDINAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J24876</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>2 - LATERAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J33030</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>3 - VERTICAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J31009</b>	<b>08/22/03</b>	<b>02/23/04</b>

**REMARKS:**

FMVSS 201U - Headform Calibration Drops

Max: 11.5 [g] at 0.004 [s]  
Min: -239.2 [g] at 0.001 [s]

Headform X Acceleration



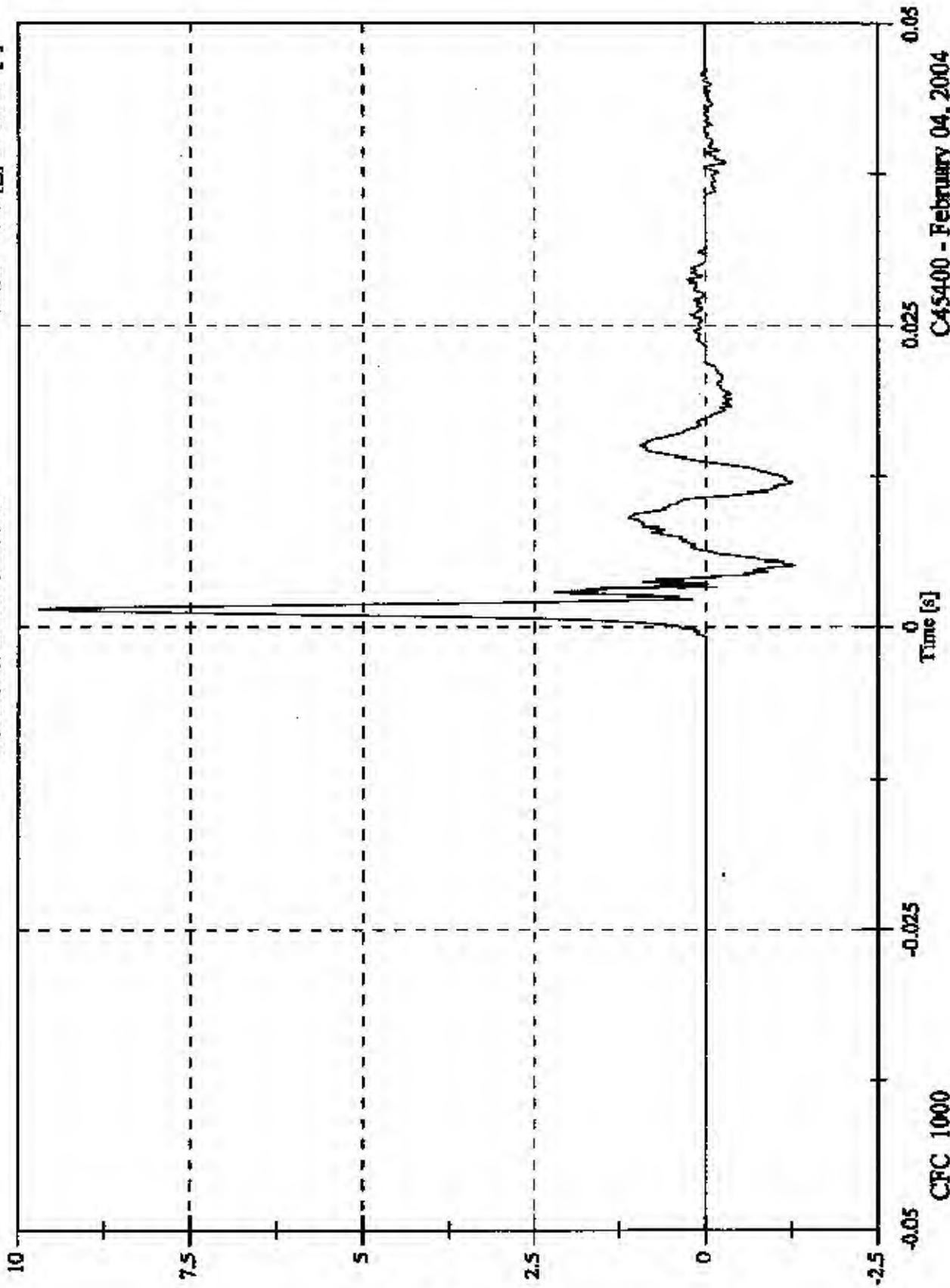
C45400 - February 04, 2004



FMVSS 201U - Headform Calibration Drops

Max: 9.7 [g] at 0.002 [s]  
Min: -1.3 [g] at 0.005 [s]

Headform Y Acceleration

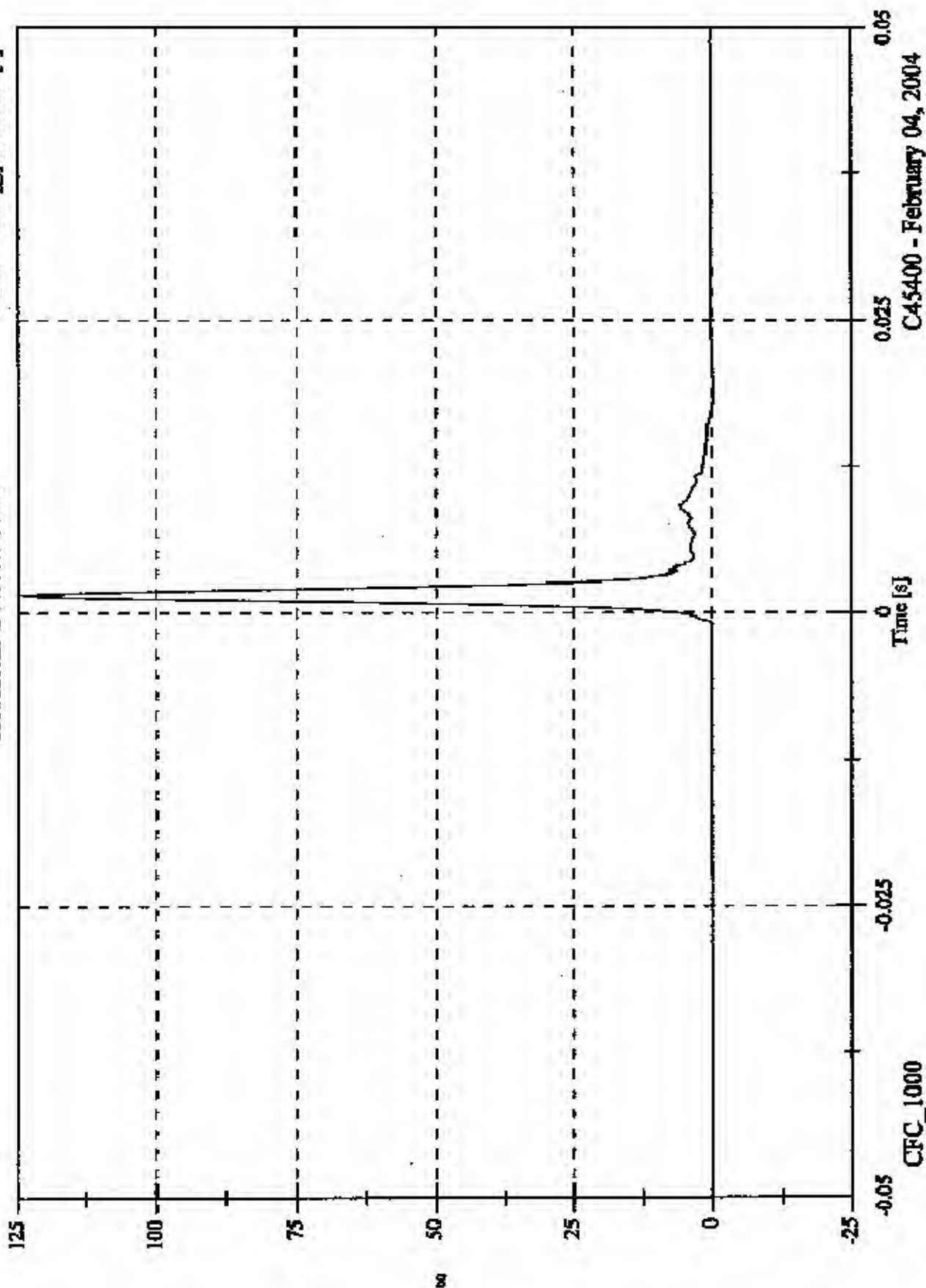


CFC\_1000

# FMVSS 201U - Headform Calibration Drops

Max: 124.4 [g] at 0.002 [s]  
Min: -0.3 [g] at 0.019 [s]

Headform Z Acceleration

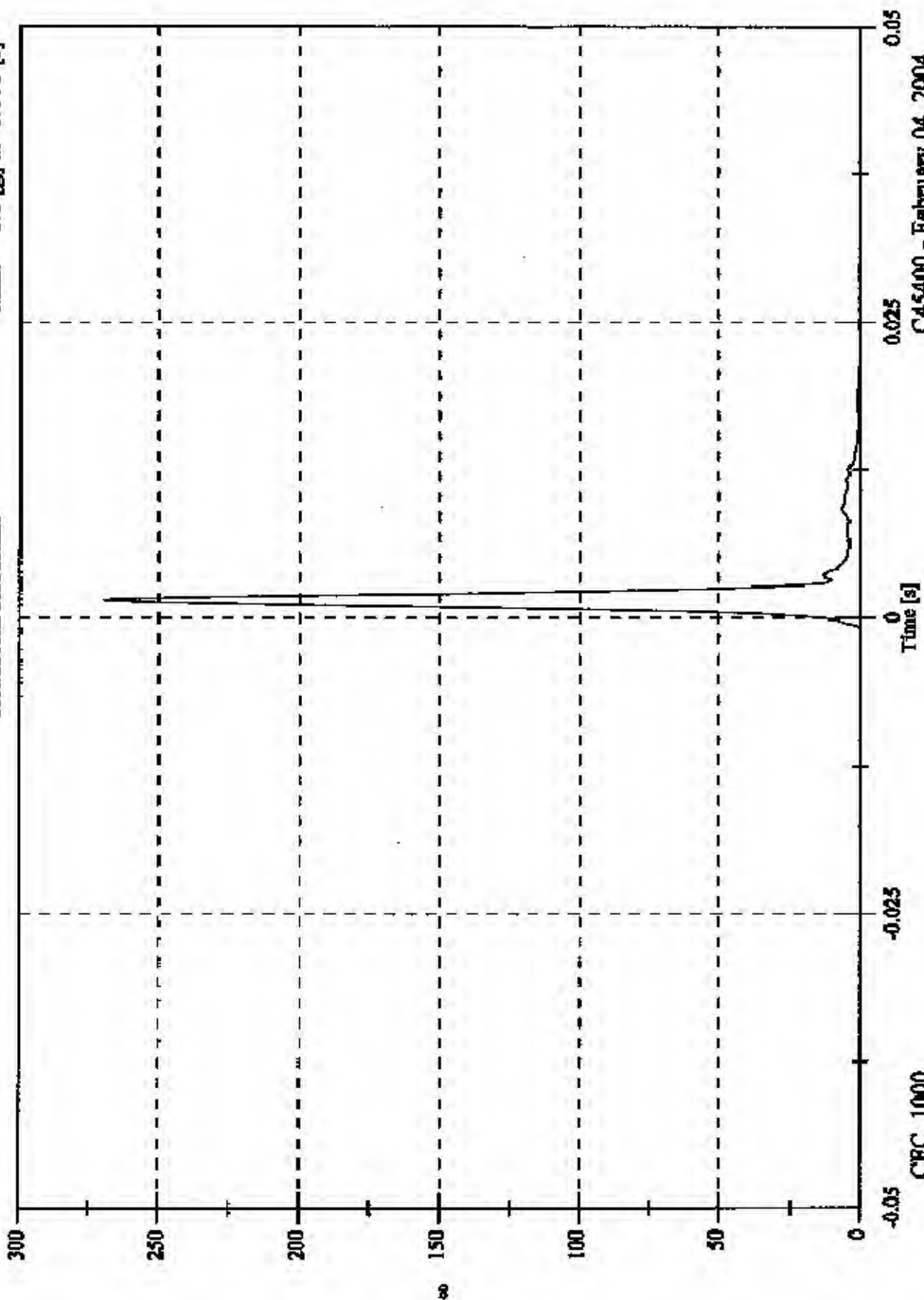


C45400 - February 04, 2004

# FMVSS 201U - Headform Calibration Drops

Max: 269.8 [g] at 0.002 [s]  
Min: 0.0 [g] at -0.001 [s]

Headform Resultant



C45400 - February 04, 2004



**PART 572L  
HEAD DROP POST-TEST**

<b>MANUFACTURER:</b>		<b>FIRST TECHNOLOGY SAFETY SYSTEMS</b>	
<b>SERIAL NUMBER:</b>		<b>0662</b>	
<b>CALIBRATION DATE:</b>		<b>February 4, 2004</b>	
<b>TEST PARAMETER</b>	<b>SPECIFICATION</b>	<b>TEST RESULTS</b>	
<b>TEMPERATURE</b>	<b>15°C to 25°C</b>	<b>23</b>	
<b>RELATIVE HUMIDITY</b>	<b>10% to 70%</b>	<b>16</b>	
<b>PEAK RESULTANT ACCELERATION</b>	<b>225 Gs to 275 Gs</b>	<b>254.7</b>	
<b>PEAK LATERAL ACCELERATION</b>	<b>15 Gs Maximum</b>	<b>7.3</b>	
<b>IS ACCELERATION CURVE UNIMODAL?</b>	<b>YES</b>	<b>YES</b>	

**HEAD ACCELEROMETER CALIBRATION INFORMATION**

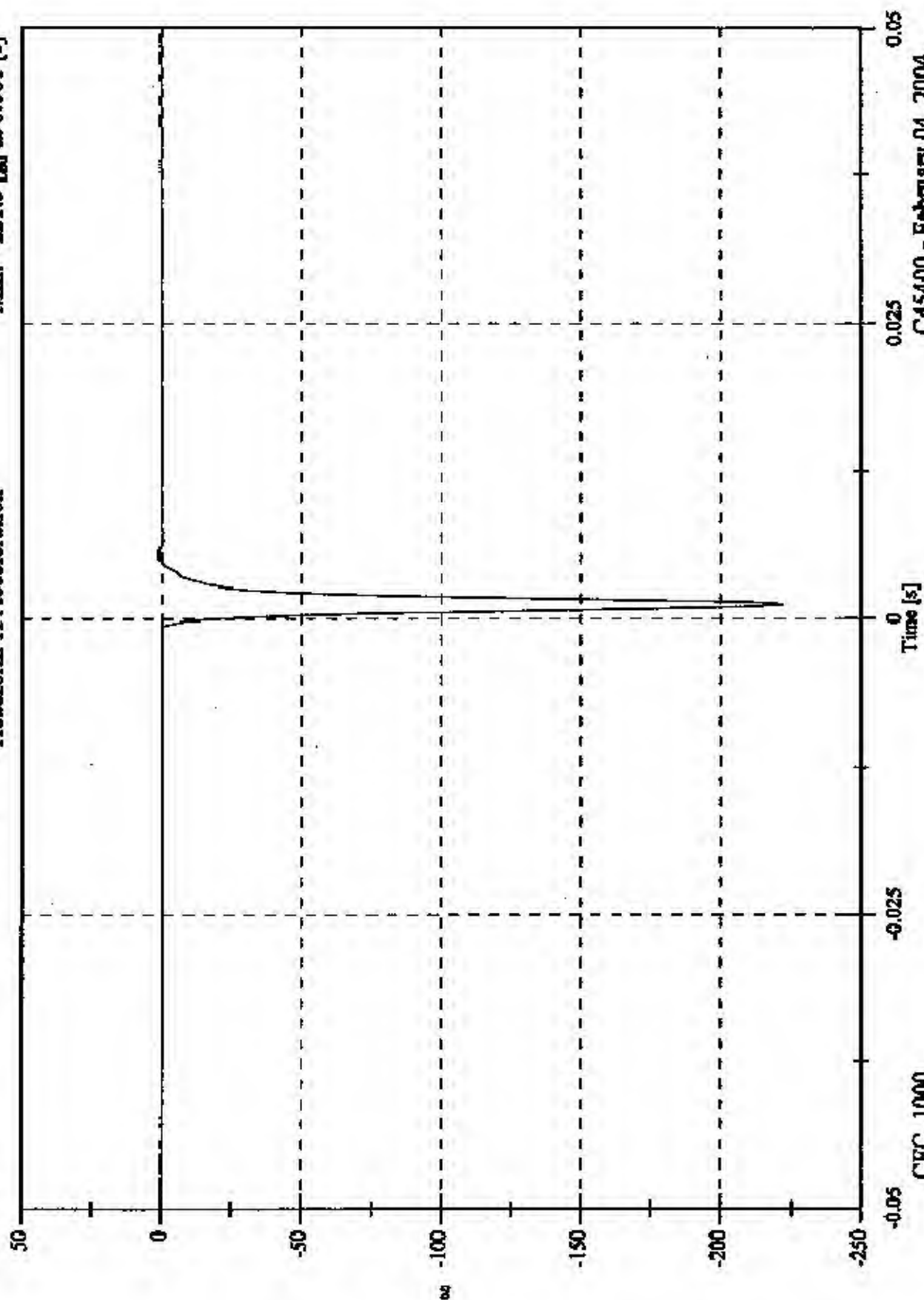
<b>ID NUMBER</b>	<b>MANUFACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DATE OF LAST CALIBRATION</b>	<b>DATE OF NEXT CALIBRATION</b>
<b>1 - LONGITUDINAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J33127</b>	<b>08/22/03</b>	<b>02/13/04</b>
<b>2 - LATERAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J33819</b>	<b>08/22/03</b>	<b>02/13/04</b>
<b>3 - VERTICAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J32782</b>	<b>08/22/03</b>	<b>02/13/04</b>

**REMARKS:**

# FMVSS 201U - Headform Calibration Drops

Max: 1.0 [g] at 0.005 [s]  
Min: -221.5 [g] at 0.001 [s]

Headform X Acceleration

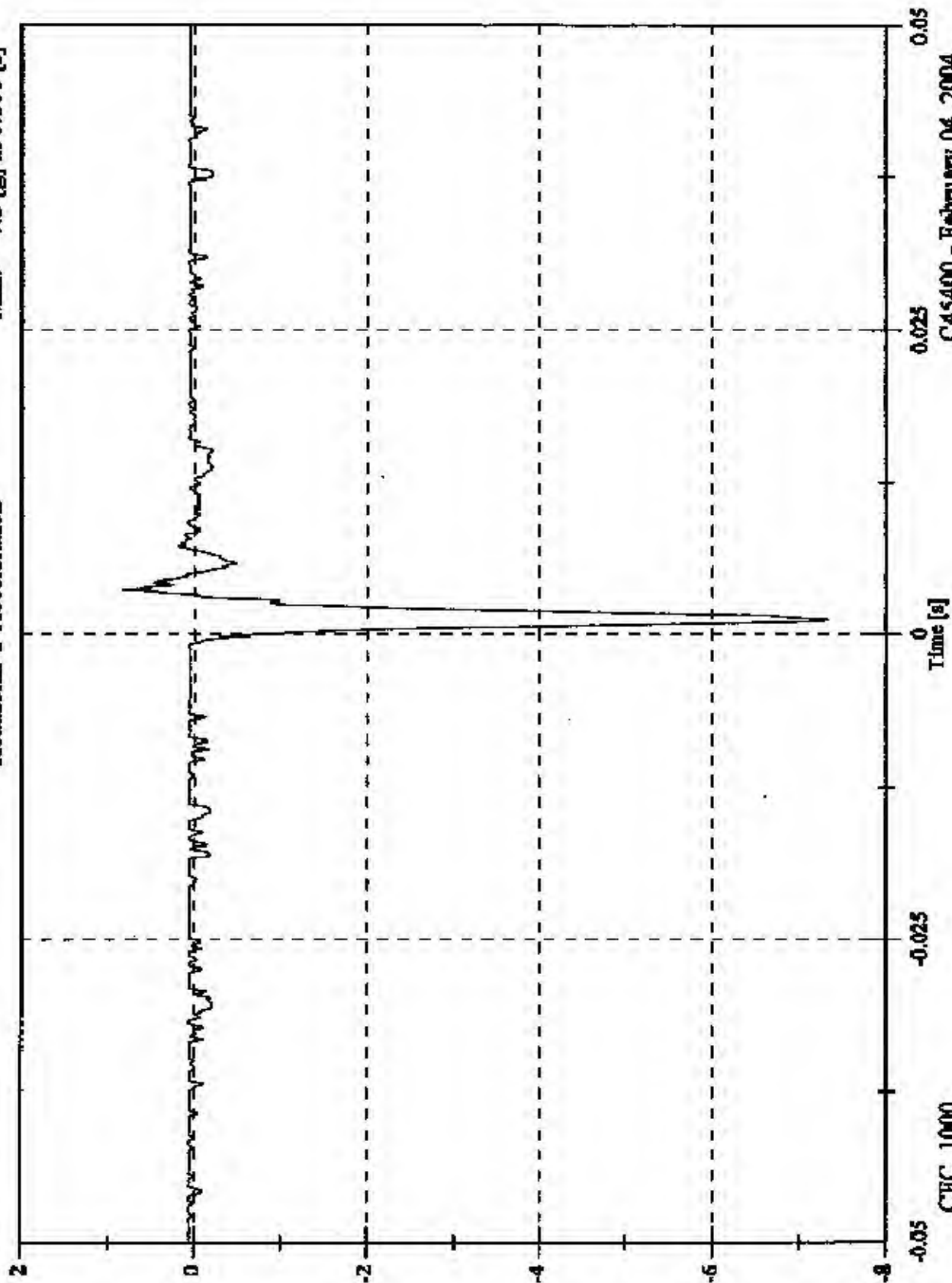


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# FMVSS 201U - Headform Calibration Drops

Max: 0.8 [g] at 0.004 [s]  
Min: -7.3 [g] at 0.001 [s]

Headform Y Acceleration



CFC\_1000

-0.025

0.025

0.05

Time [s]

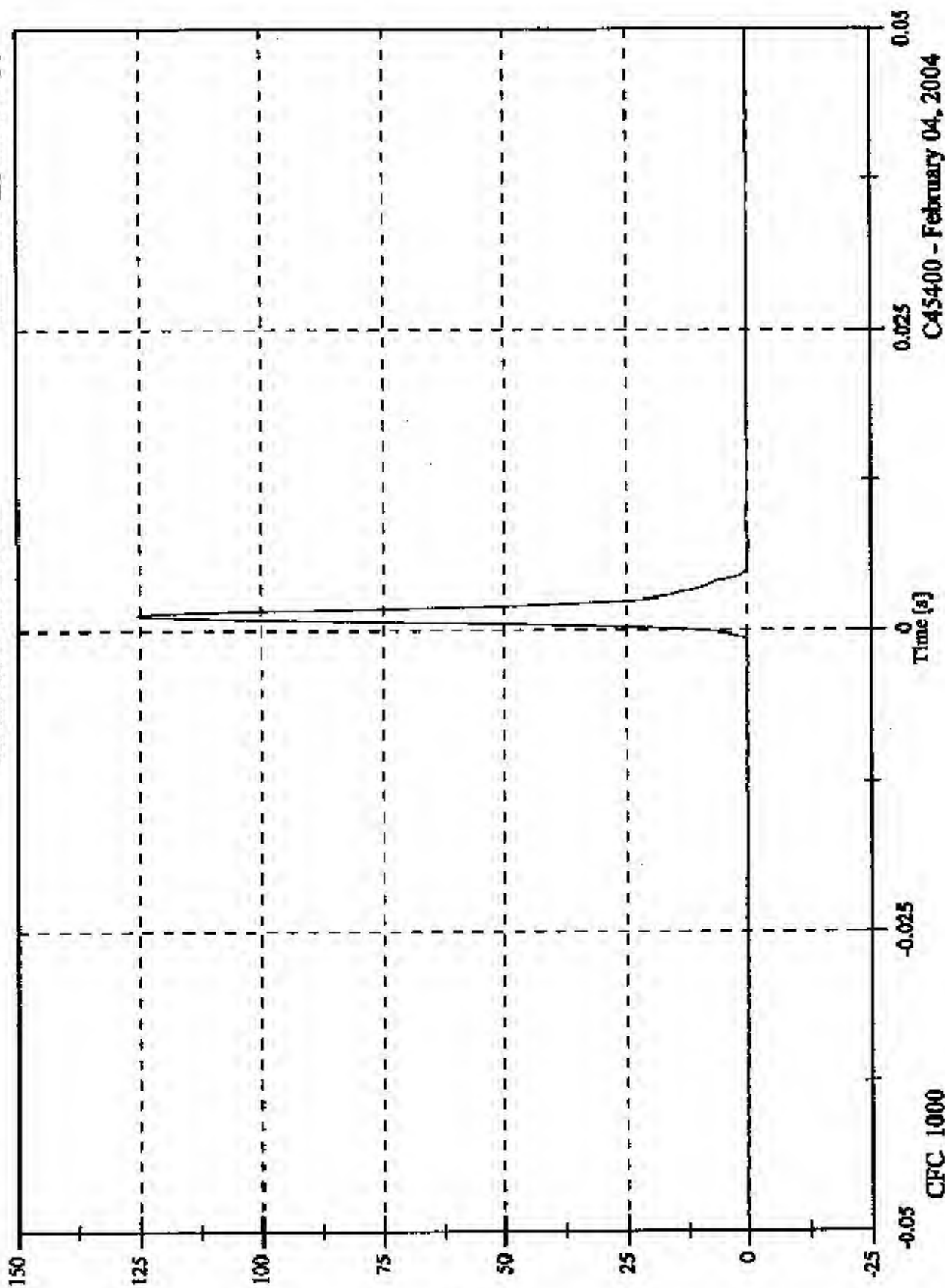
C45400 - February 04, 2004



# FMVSS 201U - Headform Calibration Drops

Max: 125.5 [g] at 0.001 [s]  
Min: -0.5 [g] at 0.007 [s]

Headform Z Acceleration

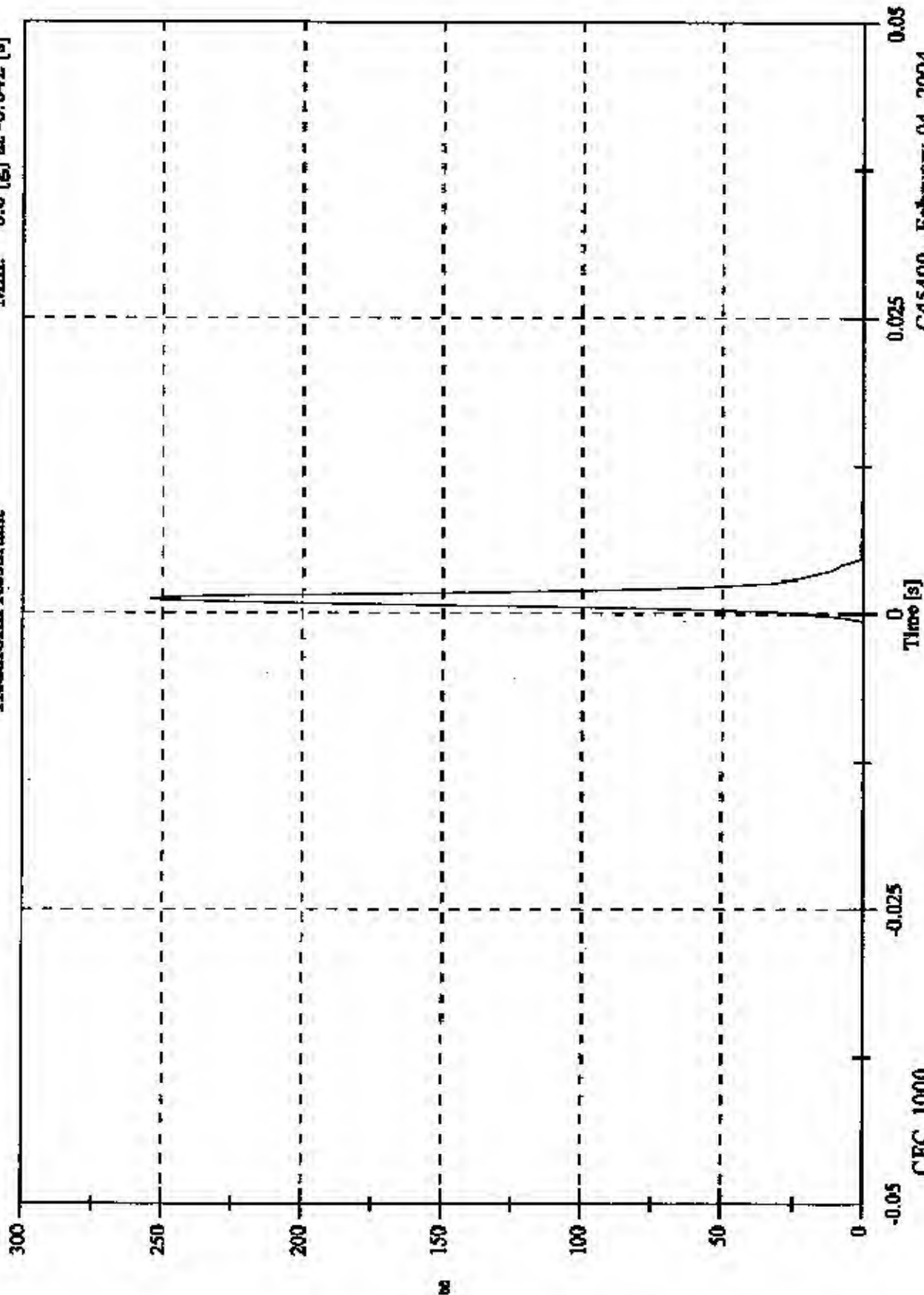


CFC\_1000

# FMVSS 201U - Headform Calibration Drops

Max: 254.7 [g] at 0.001 [s]  
Min: 0.0 [g] at -0.042 [s]

Headform Resultant



C45400 - February 04, 2004

**PART 572L  
HEAD DROP POST-TEST**

<b>MANUFACTURER:</b>		<b>FIRST TECHNOLOGY SAFETY SYSTEMS</b>	
<b>SERIAL NUMBER:</b>		<b>885</b>	
<b>CALIBRATION DATE:</b>		<b>February 4, 2004</b>	
<b>TEST PARAMETER</b>	<b>SPECIFICATION</b>	<b>TEST RESULTS</b>	
<b>TEMPERATURE</b>	<b>19°C to 26°C</b>	<b>23</b>	
<b>RELATIVE HUMIDITY</b>	<b>10% to 70%</b>	<b>16</b>	
<b>PEAK RESULTANT ACCELERATION</b>	<b>225 Gs to 275 Gs</b>	<b>261.7</b>	
<b>PEAK LATERAL ACCELERATION</b>	<b>15 Gs Maximum</b>	<b>4.5</b>	
<b>IS ACCELERATION CURVE UNIMODAL?</b>	<b>YES</b>	<b>YES</b>	

**HEAD ACCELEROMETER CALIBRATION INFORMATION**

<b>ID NUMBER</b>	<b>MANUFACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DATE OF LAST CALIBRATION</b>	<b>DATE OF NEXT CALIBRATION</b>
<b>1-LONGITUDINAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J38127</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>2 - LATERAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J37980</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>3 - VERTICAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J37854</b>	<b>08/22/03</b>	<b>02/23/04</b>

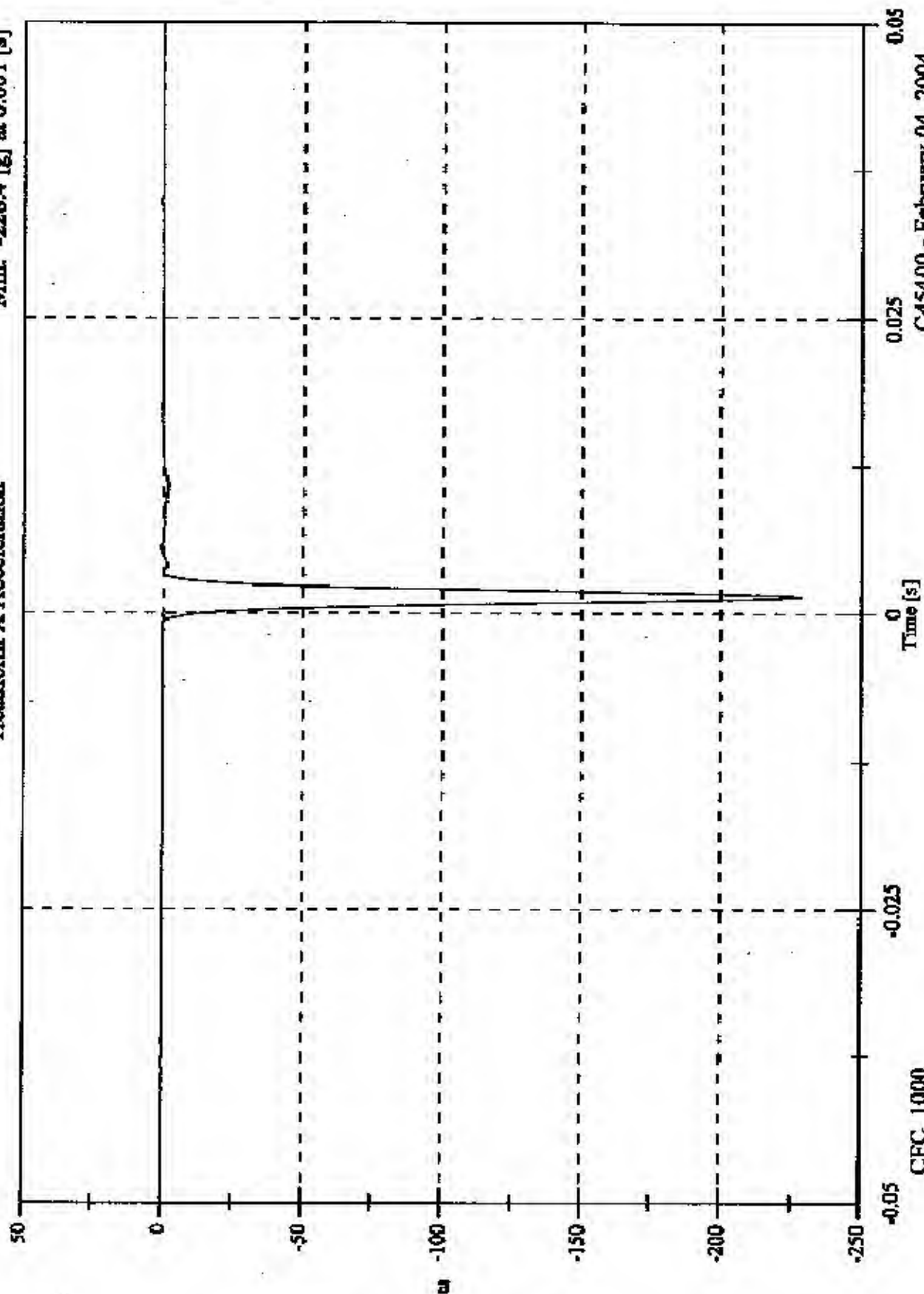
**REMARKS:**



# FMVSS 201U - Headform Calibration Drops

Headform X Acceleration

Max: 1.0 [g] at 0.035 [s]  
Min: -228.4 [g] at 0.001 [s]

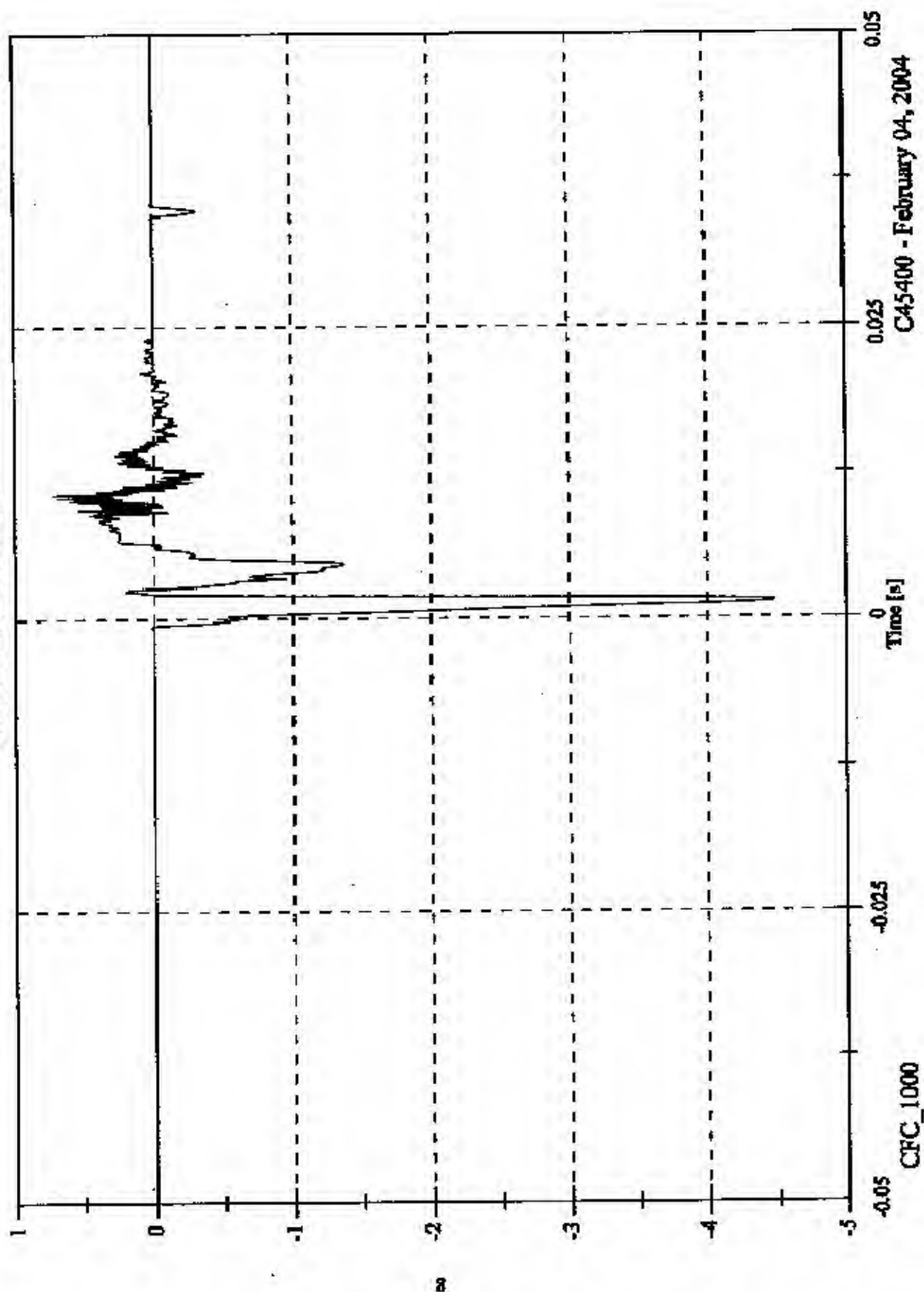


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# FMVSS 201U - Headform Calibration Drops

Max: 0.7 [g] at 0.011 [s]  
Min: -4.5 [g] at 0.001 [s]

Headform Y Acceleration

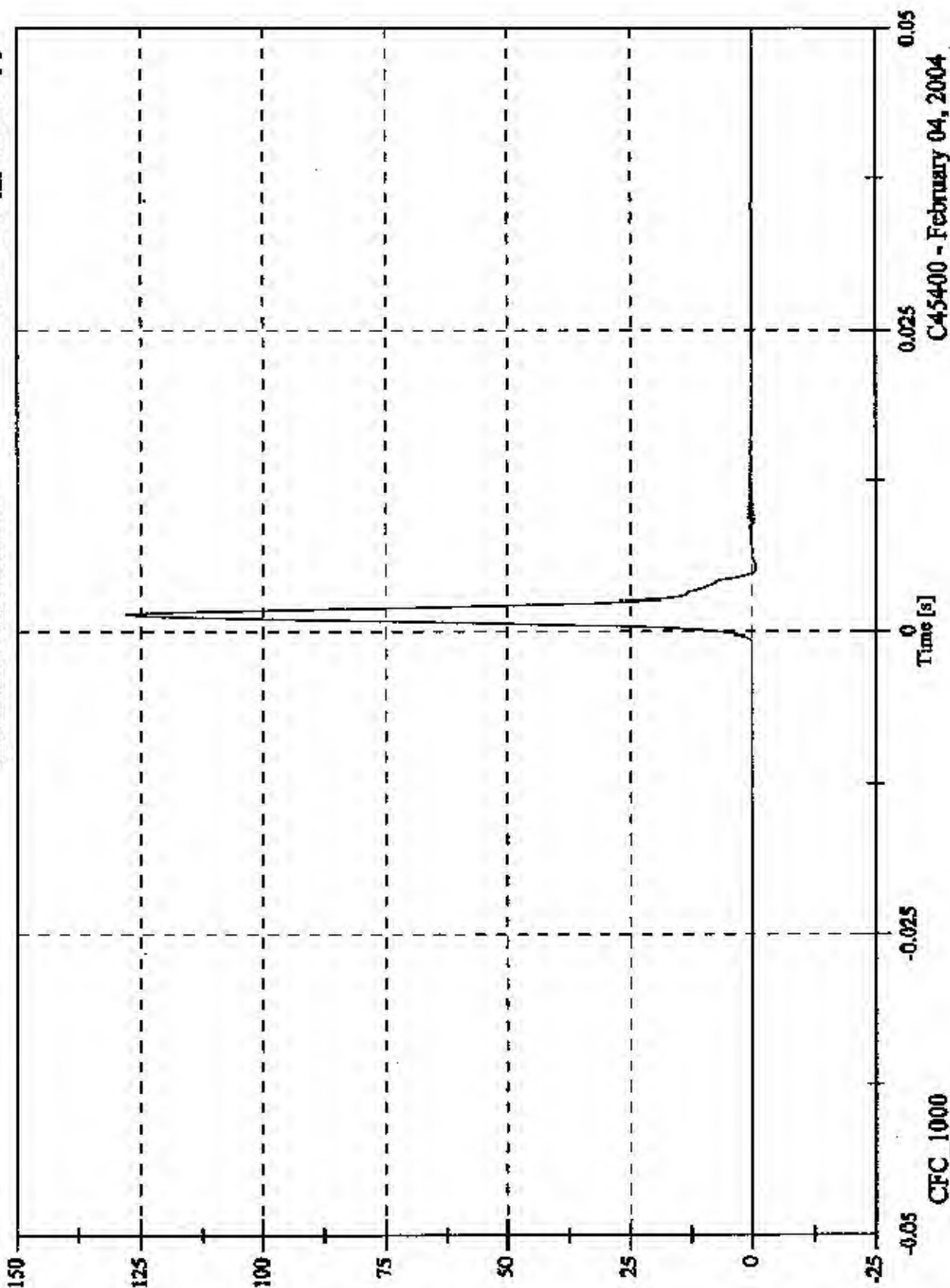


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# FMVSS 201U - Headform Calibration Drops

Max: 127.9 [g] at 0.001 [s]  
Min: -0.9 [g] at 0.005 [s]

Headform Z Acceleration

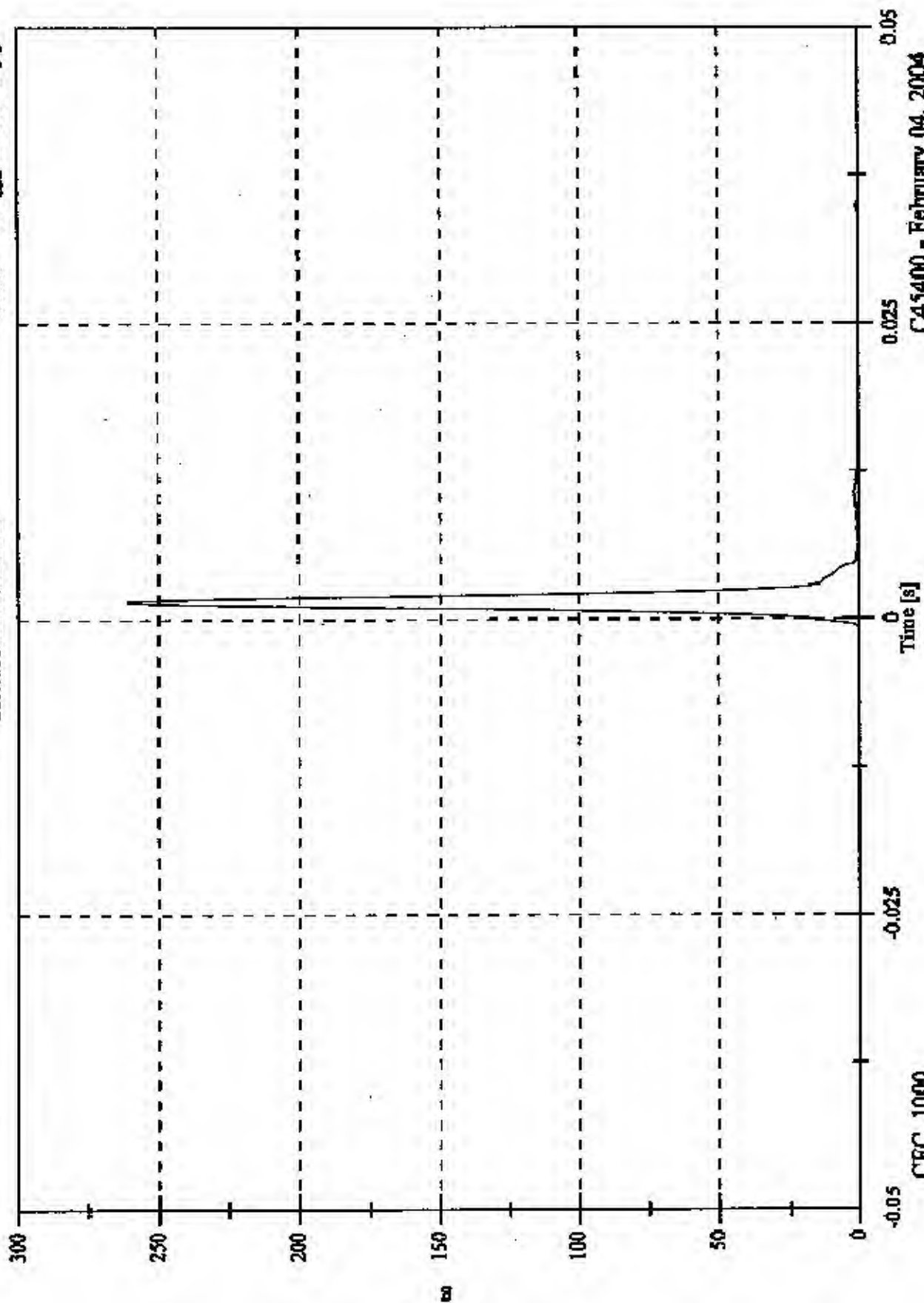




# FMVSS 201U - Headform Calibration Drops

Max: 261.7 [g] at 0.001 [s]  
Min: 0.0 [g] at -0.022 [s]

Headform Resultant



CFC\_1000

Time [s]

**PART 572L  
HEAD DROP POST-TEST**

<b>MANUFACTURER:</b>		<b>FIRST TECHNOLOGY SAFETY SYSTEMS</b>
<b>SERIAL NUMBER:</b>		<b>0355</b>
<b>CALIBRATION DATE:</b>		<b>February 4, 2004</b>
<b>TEST PARAMETER</b>	<b>SPECIFICATION</b>	<b>TEST RESULTS</b>
<b>TEMPERATURE</b>	<b>19°C to 26°C</b>	<b>23</b>
<b>RELATIVE HUMIDITY</b>	<b>10% to 70%</b>	<b>16</b>
<b>PEAK RESULTANT ACCELERATION</b>	<b>225 Gs to 275 Gs</b>	<b>240.6</b>
<b>PEAK LATERAL ACCELERATION</b>	<b>15 Gs Maximum</b>	<b>7.8</b>
<b>IS ACCELERATION CURVE UNIMODAL?</b>	<b>YES</b>	<b>YES</b>

**HEAD ACCELEROMETER CALIBRATION INFORMATION**

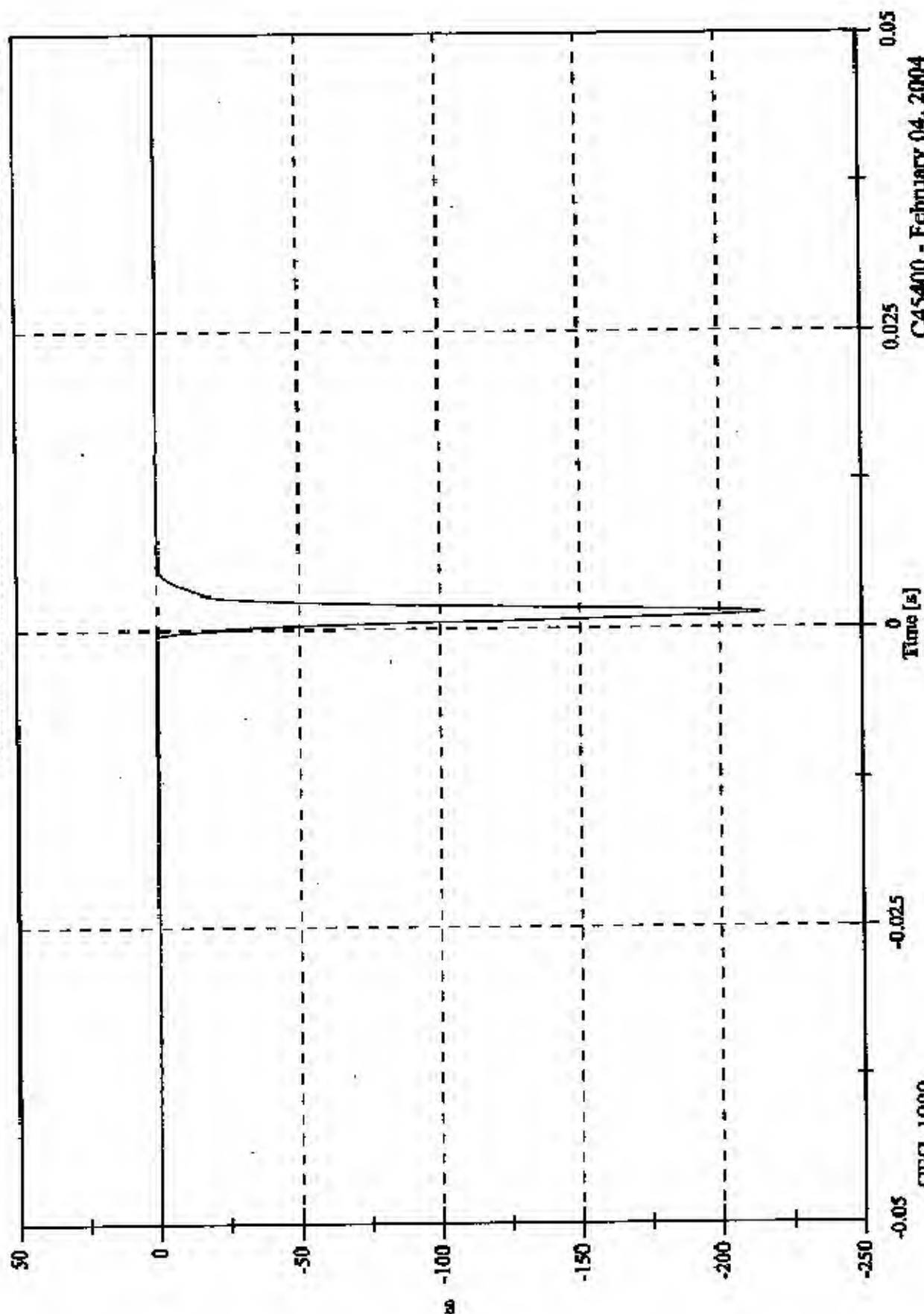
<b>ID NUMBER</b>	<b>MANUFACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DATE OF LAST CALIBRATION</b>	<b>DATE OF NEXT CALIBRATION</b>
<b>1 - LONGITUDINAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J28671</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>2 - LATERAL</b>	<b>ENDEVCO</b>	<b>7264-2800T</b>	<b>J31779</b>	<b>08/22/03</b>	<b>02/23/04</b>
<b>3 - VERTICAL</b>	<b>ENDEVCO</b>	<b>7264-2800T</b>	<b>J28854</b>	<b>08/22/03</b>	<b>02/23/04</b>

**REMARKS:**

# FMVSS 201U - Headform Calibration Drops

Headform X Acceleration

Max: 0.5 [g] at 0.014 [s]  
Min: -215.2 [g] at 0.001 [s]



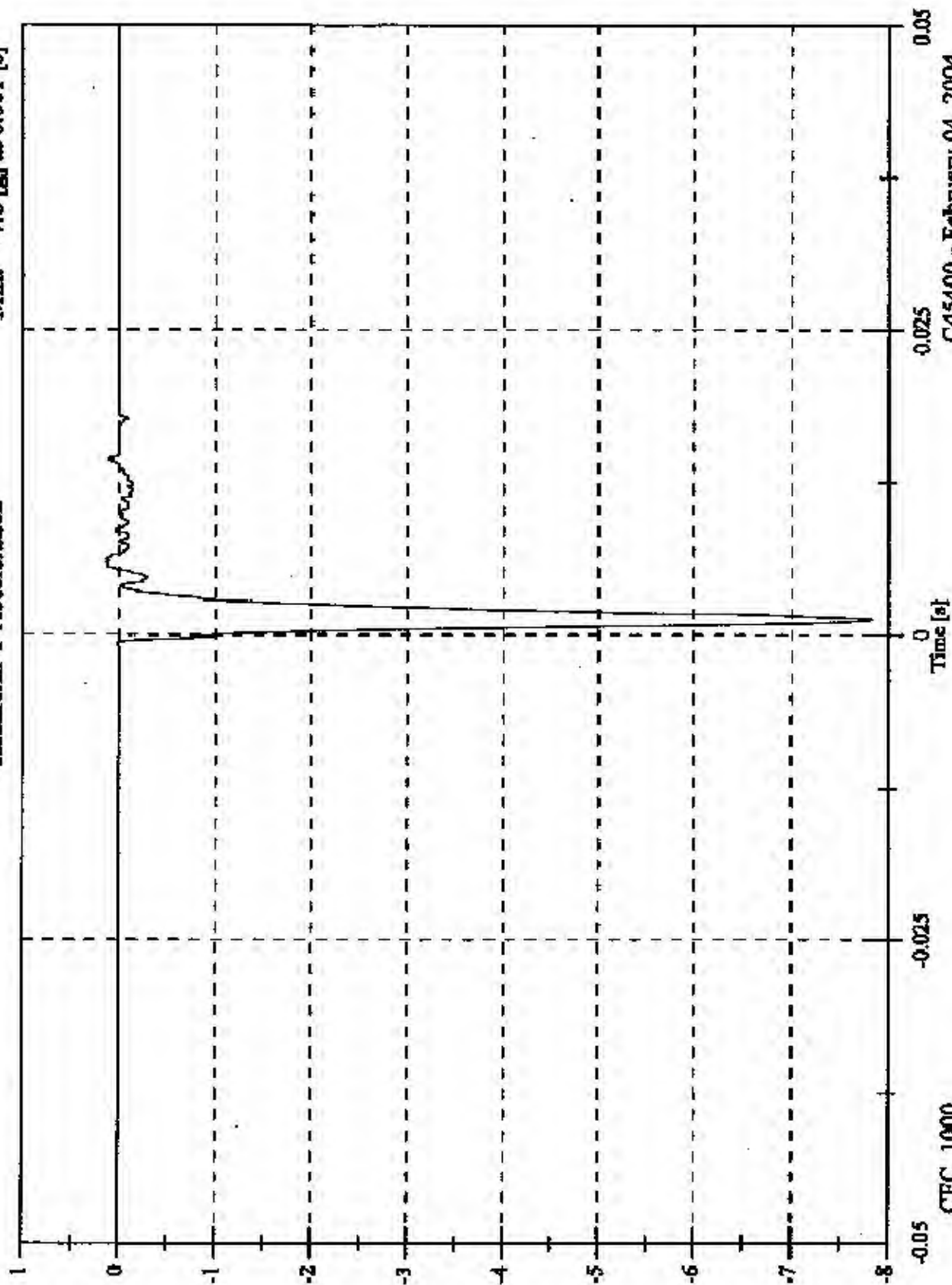
C45400 - February 04, 2004



# FMVSS 201U - Headform Calibration Drops

Max: 0.1 [g] at 0.006 [s]  
Min: -7.8 [g] at 0.001 [s]

Headform Y Acceleration

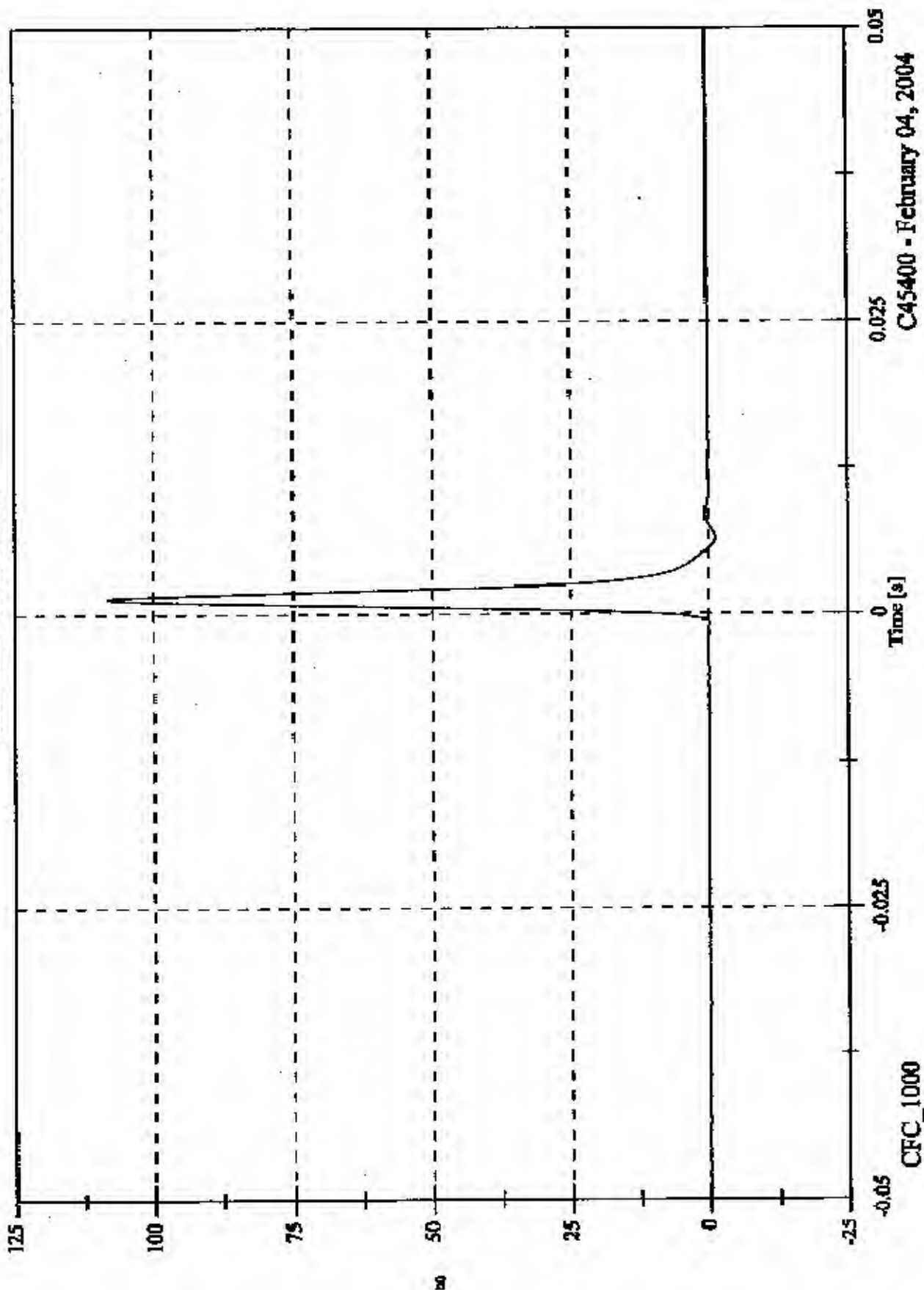


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# FMVSS 201U - Headform Calibration Drops

Max: 108.3 [g] at 0.001 [s]  
Min: -1.3 [g] at 0.007 [s]

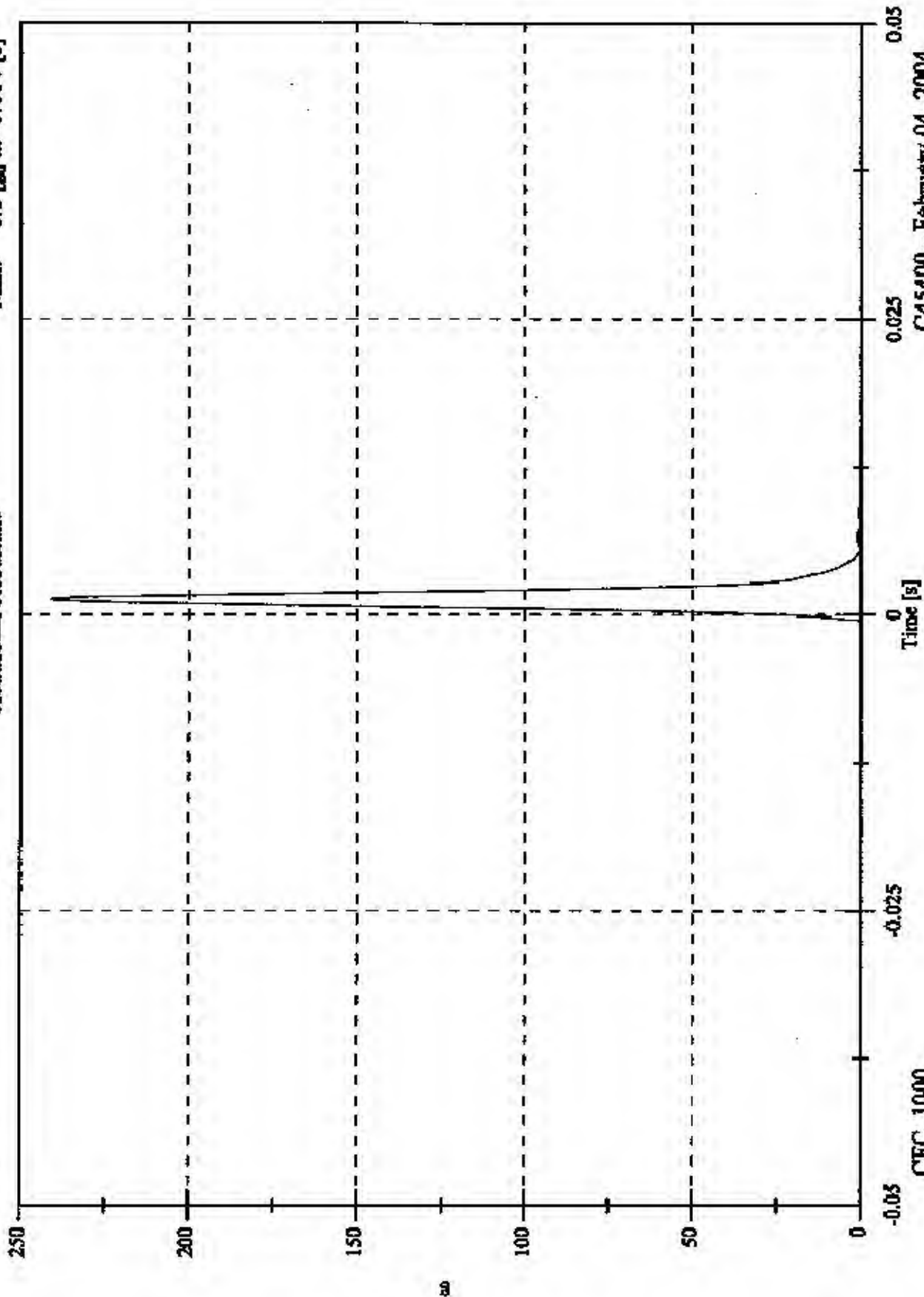
Headform Z Acceleration



# FMVSS 201U - Headform Calibration Drops

Max: 240.6 [g] at 0.001 [s]  
Min: 0.0 [g] at -0.014 [s]

Headform Resultant



C45400 - February 04, 2004



**PART 572L  
HEAD DROP POST-TEST**

<b>MANUFACTURER:</b>		<b>FIRST TECHNOLOGY SAFETY SYSTEMS</b>
<b>SERIAL NUMBER:</b>		<b>1255</b>
<b>CALIBRATION DATE:</b>		<b>February 4, 2004</b>
<b>TEST PARAMETER</b>	<b>SPECIFICATION</b>	<b>TEST RESULTS</b>
<b>TEMPERATURE</b>	<b>19°C to 24°C</b>	<b>23</b>
<b>RELATIVE HUMIDITY</b>	<b>10% to 70%</b>	<b>16</b>
<b>PEAK RESULTANT ACCELERATION</b>	<b>225 Gs to 175 Gs</b>	<b>267.3</b>
<b>PEAK LATERAL ACCELERATION</b>	<b>15 Gs Maximum</b>	<b>4.5</b>
<b>IS ACCELERATION CURVE UNIMODAL?</b>	<b>YES</b>	<b>YES</b>

**HEAD ACCELEROMETER CALIBRATION INFORMATION**

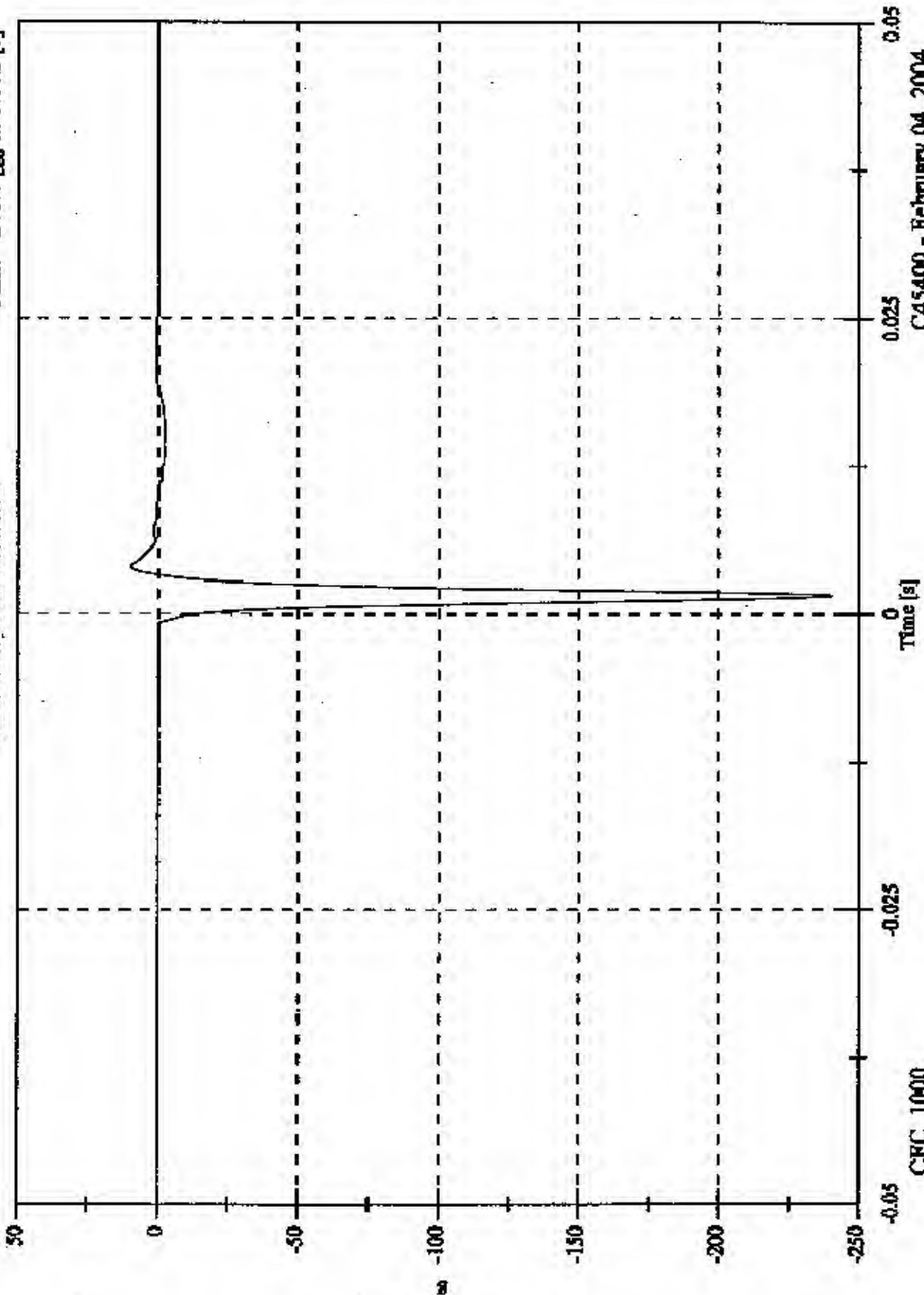
<b>ID. NUMBER</b>	<b>MANUFACTURER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>DATE OF LAST CALIBRATION</b>	<b>DATE OF NEXT CALIBRATION</b>
<b>1 - LONGITUDINAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J41806</b>	<b>02/22/03</b>	<b>02/23/04</b>
<b>2 - LATERAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J48994</b>	<b>02/22/03</b>	<b>02/23/04</b>
<b>3 - VERTICAL</b>	<b>ENDEVCO</b>	<b>7264-2000T</b>	<b>J41087</b>	<b>02/22/03</b>	<b>02/23/04</b>

**REMARKS:**

FMVSS 201U - Headform Calibration Drops

Max: 10.2 [g] at 0.004 [s]  
Min: -240.0 [g] at 0.002 [s]

Headform X Acceleration



CFC\_1000

-0.025

Time [s]

0.025

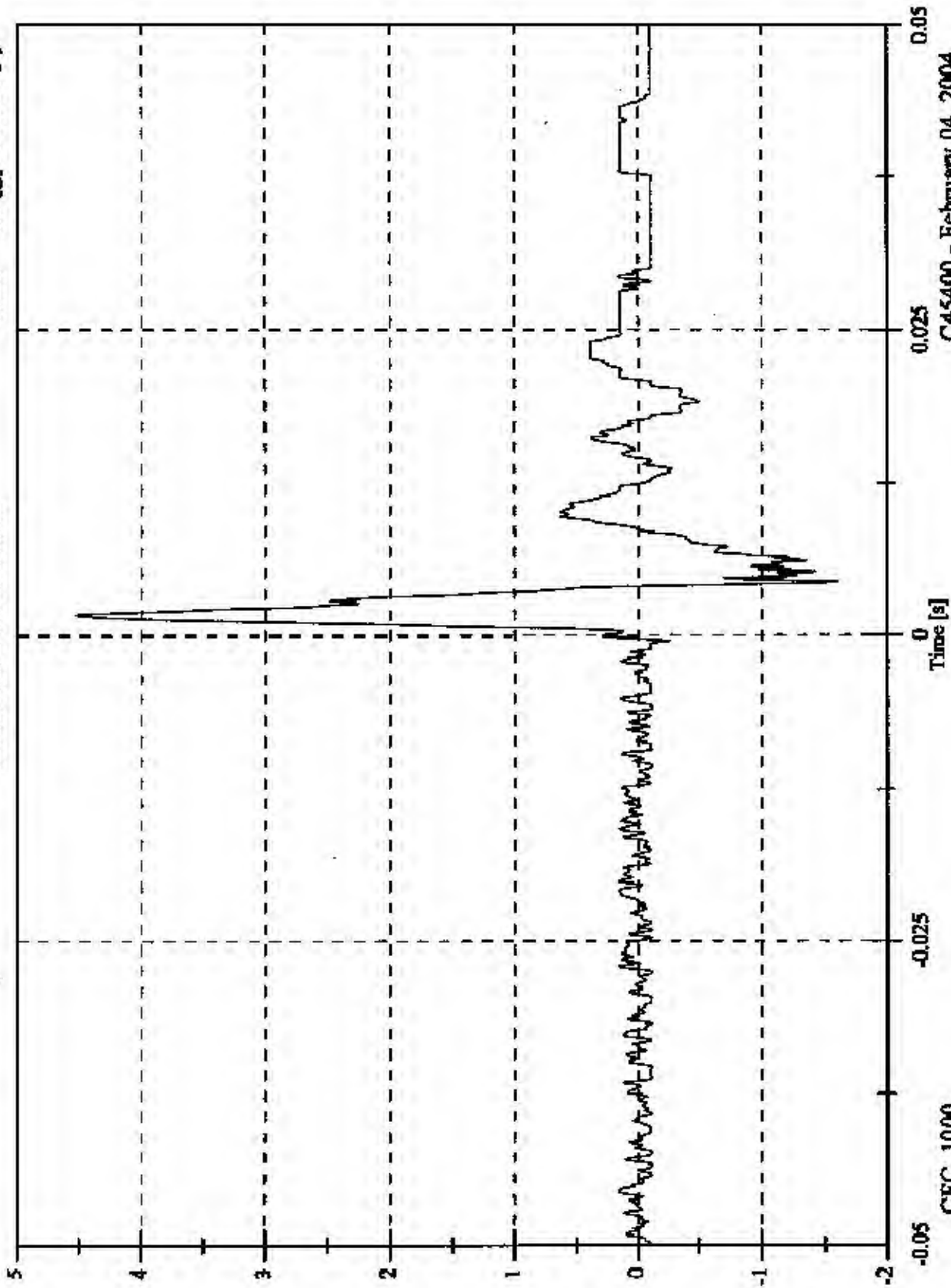
0.05

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# FMVSS 201U - Headform Calibration Drops

Max: 4.5 [g] at 0.002 [s]  
Min: -1.6 [g] at 0.004 [s]

Headform Y Acceleration



CFC\_1000

-0.025

0 Time [s]

0.025

0.05

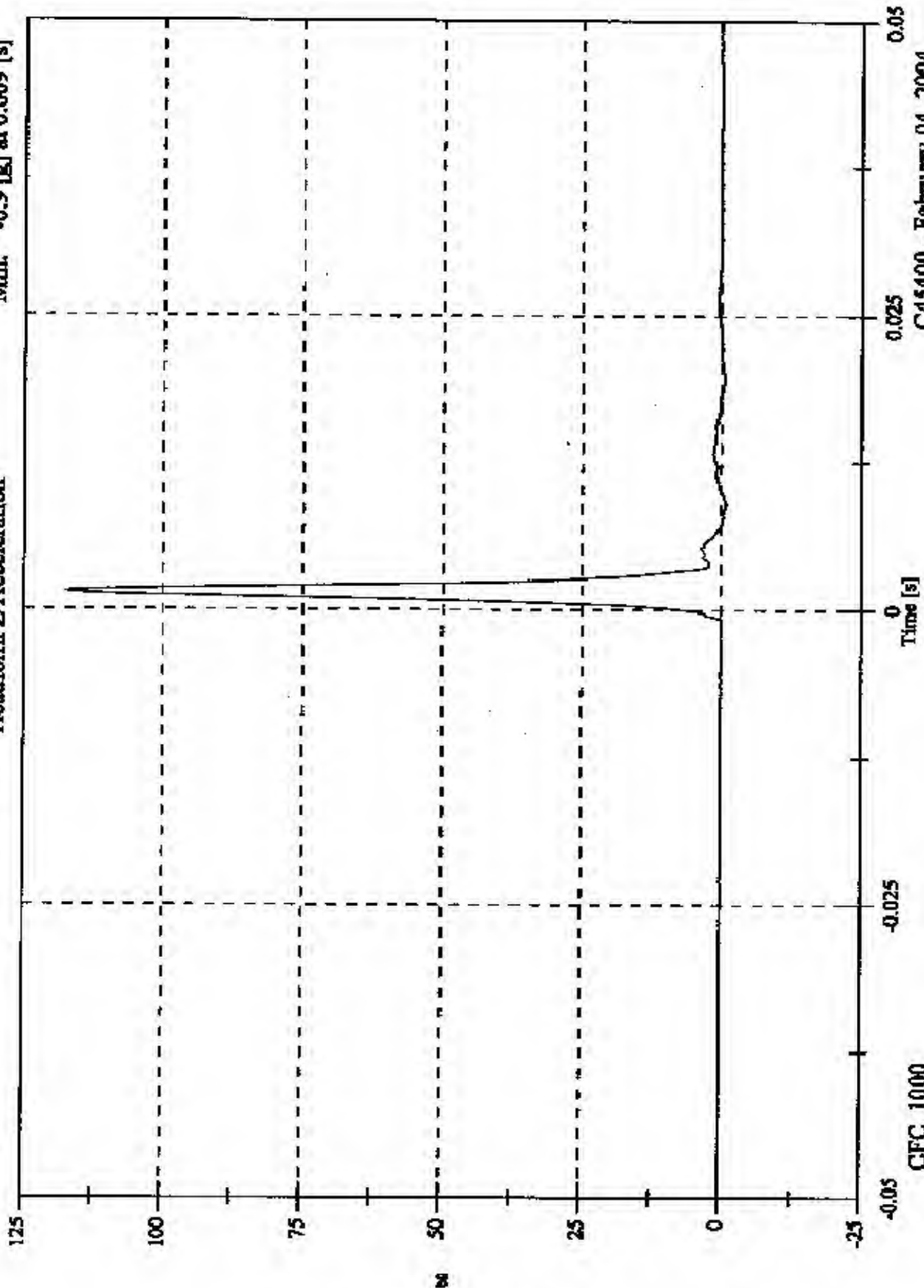
C45400 - February 04, 2004



# FMVSS 201U - Headform Calibration Drops

Max: 117.7 [g] at 0.002 [s]  
Min: -0.9 [g] at 0.009 [s]

Headform Z Acceleration

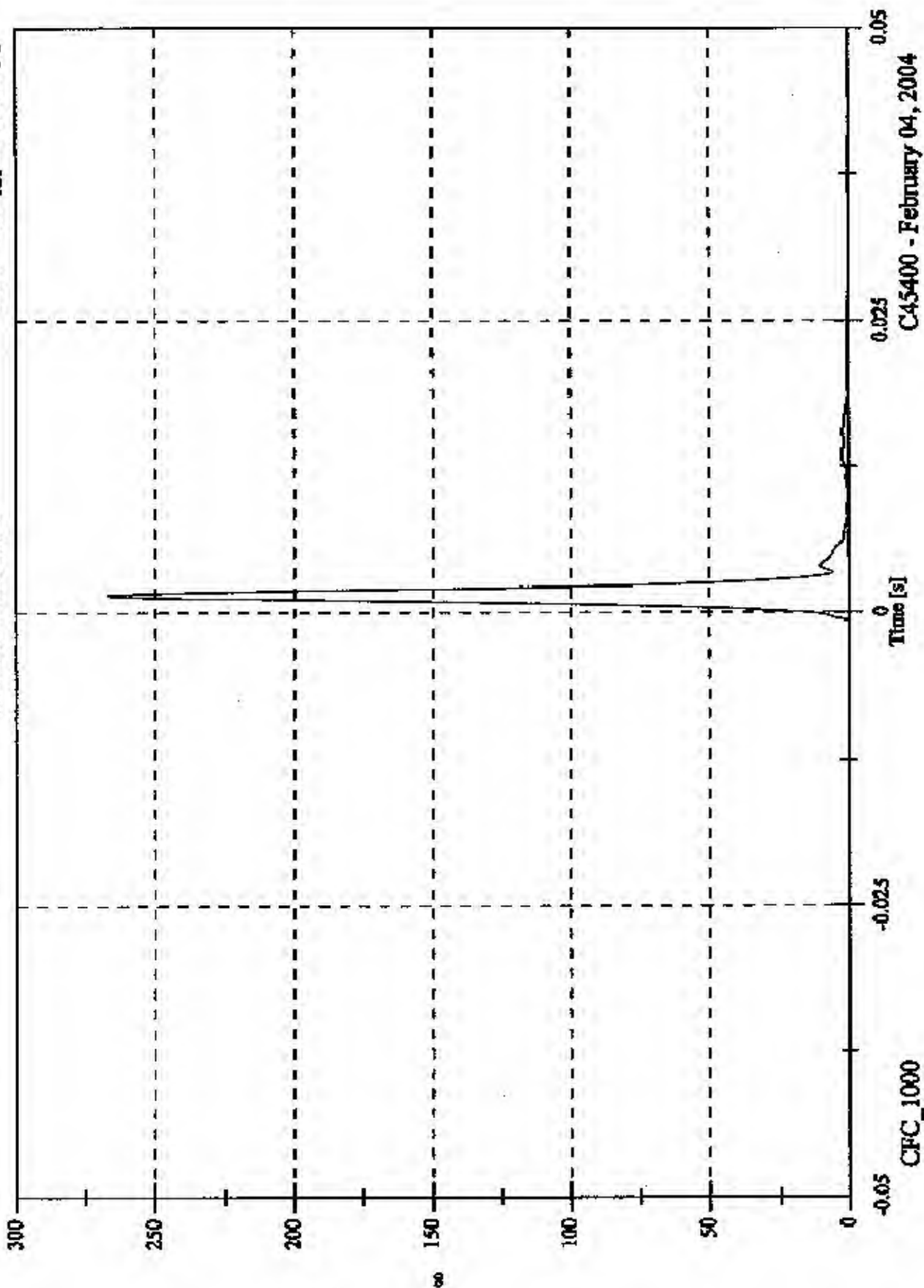


C45400 - February 04, 2004

# FMVSS 201U - Headform Calibration Drops

Max: 267.3 [g] at 0.002 [s]  
Min: 0.0 [g] at -0.015 [s]

Headform Resultant



C45400 - February 04, 2004